WALNUT VENEER TYPES

[illegible]

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Plain, Wild Heart . . . 3
Plain, Contrasty . . . 3
Plain, Leaf or Shell Figure . . . 4
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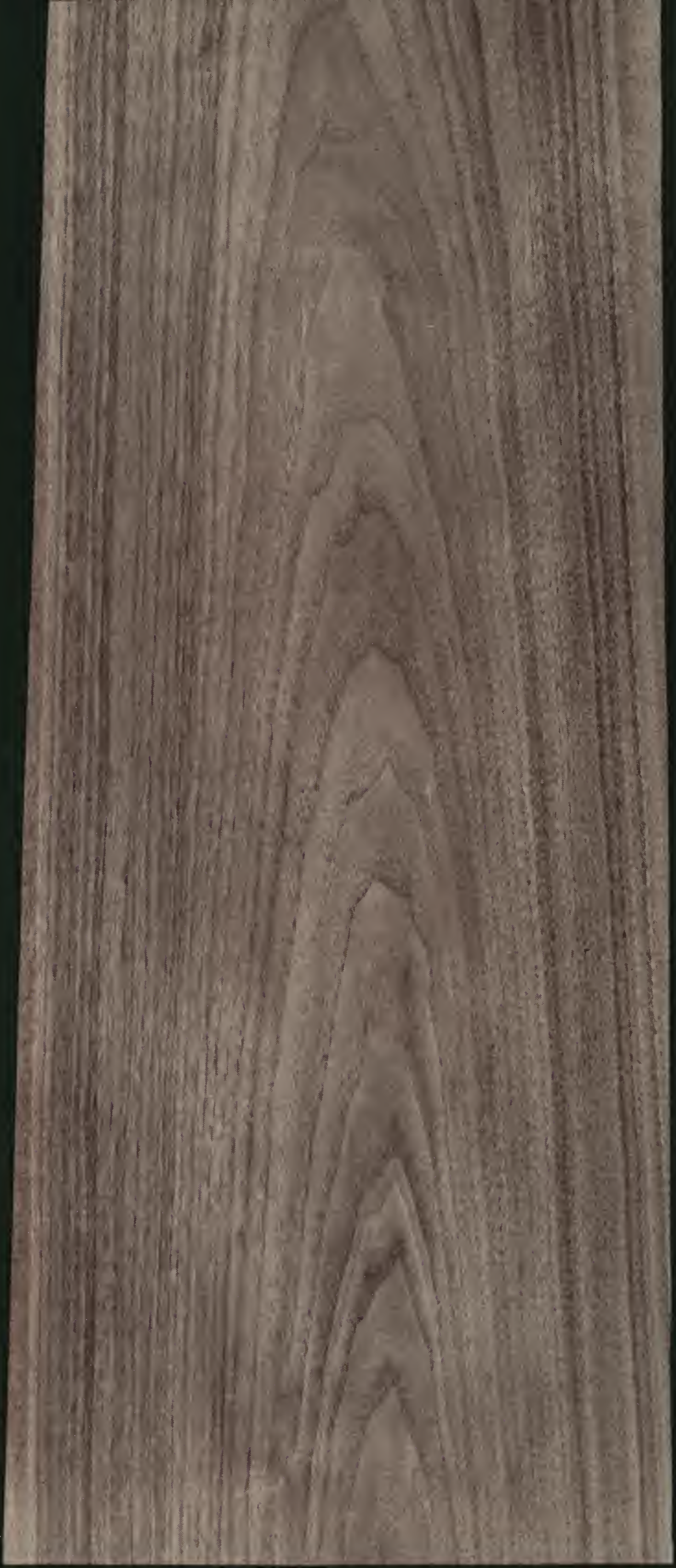
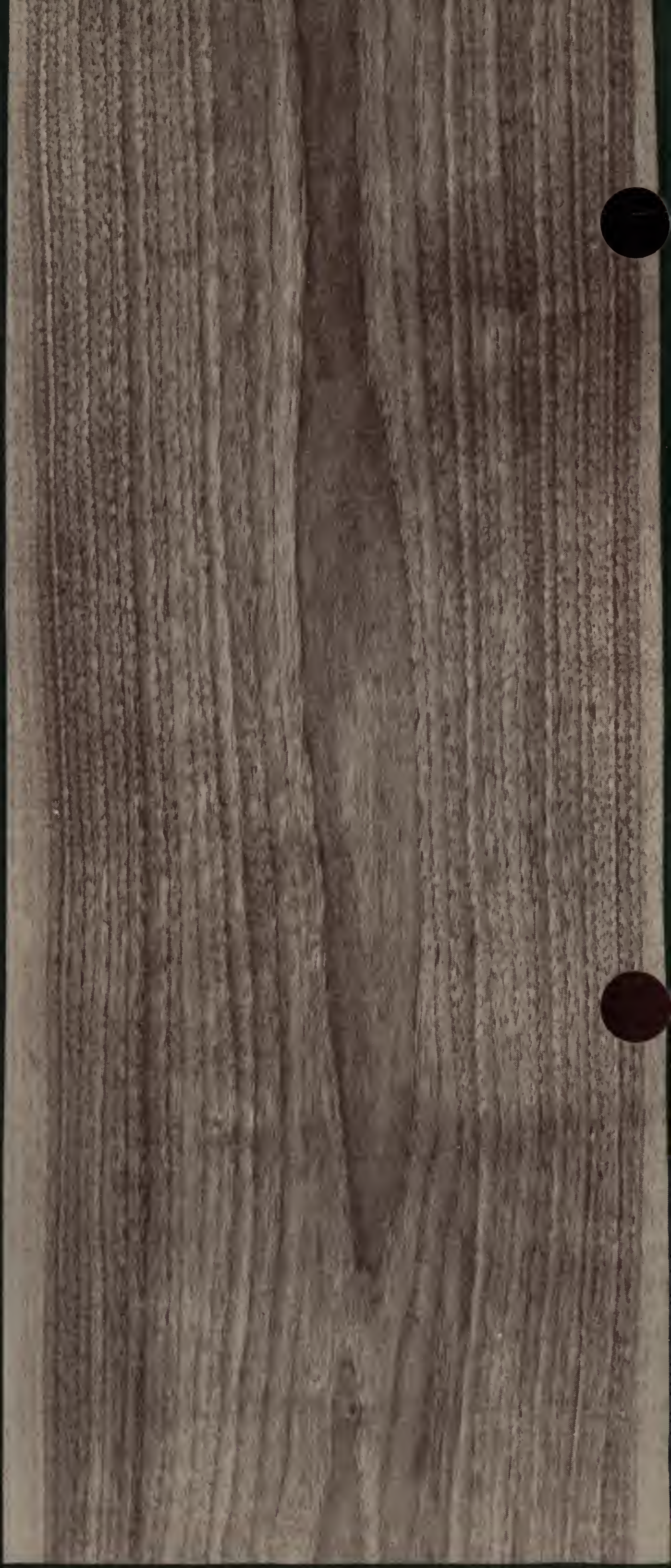
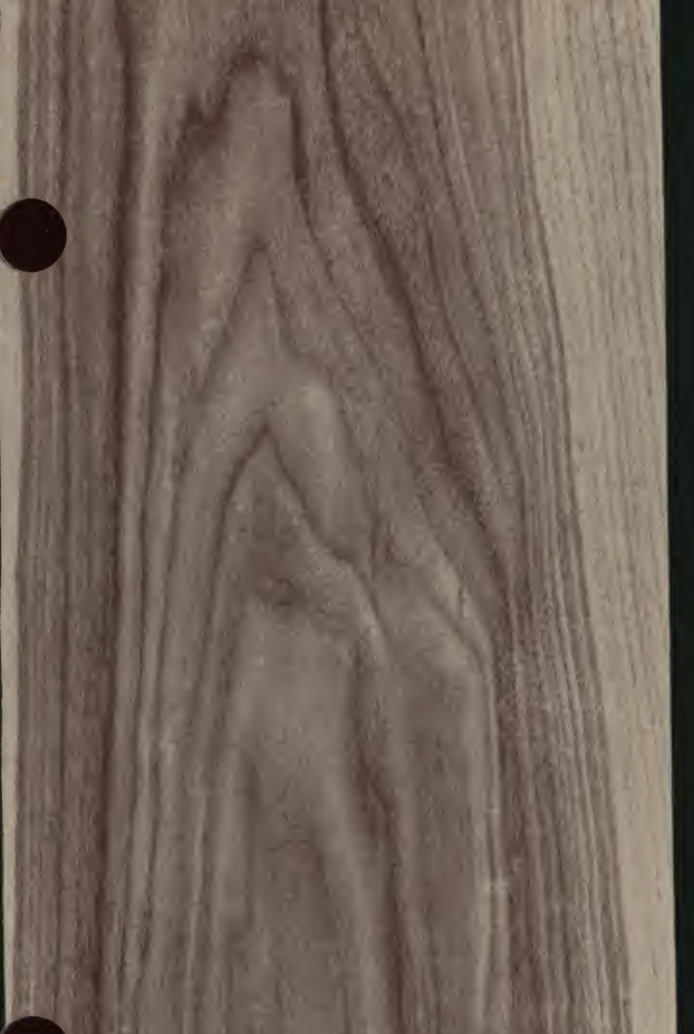


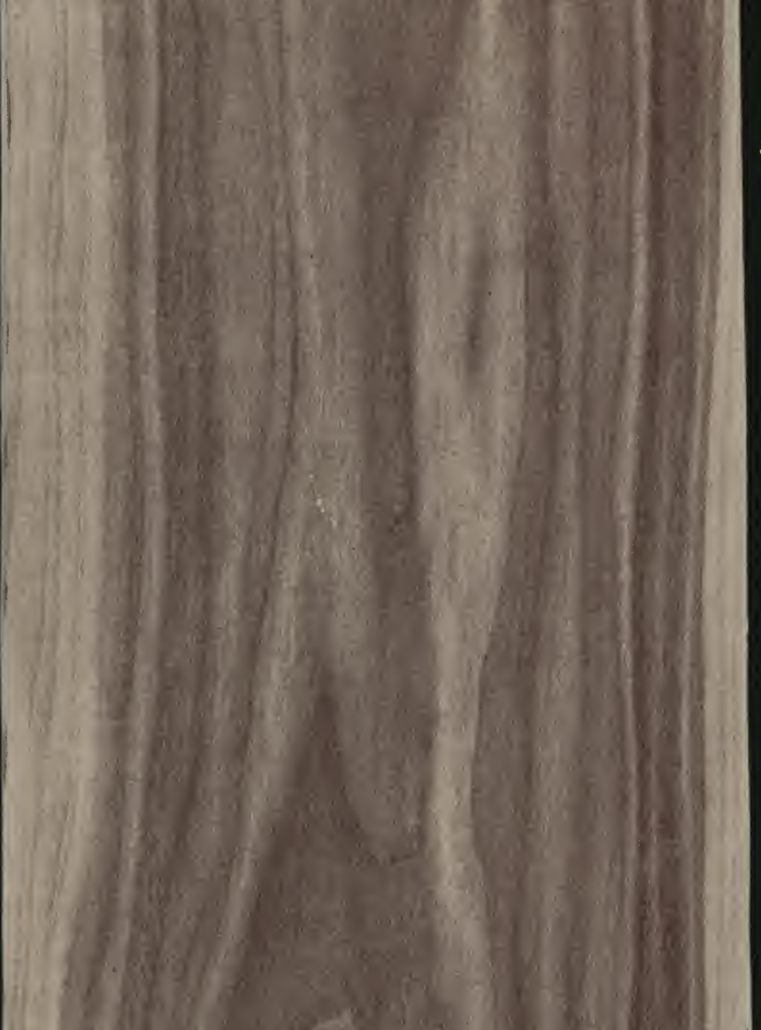
1. Plain Sliced



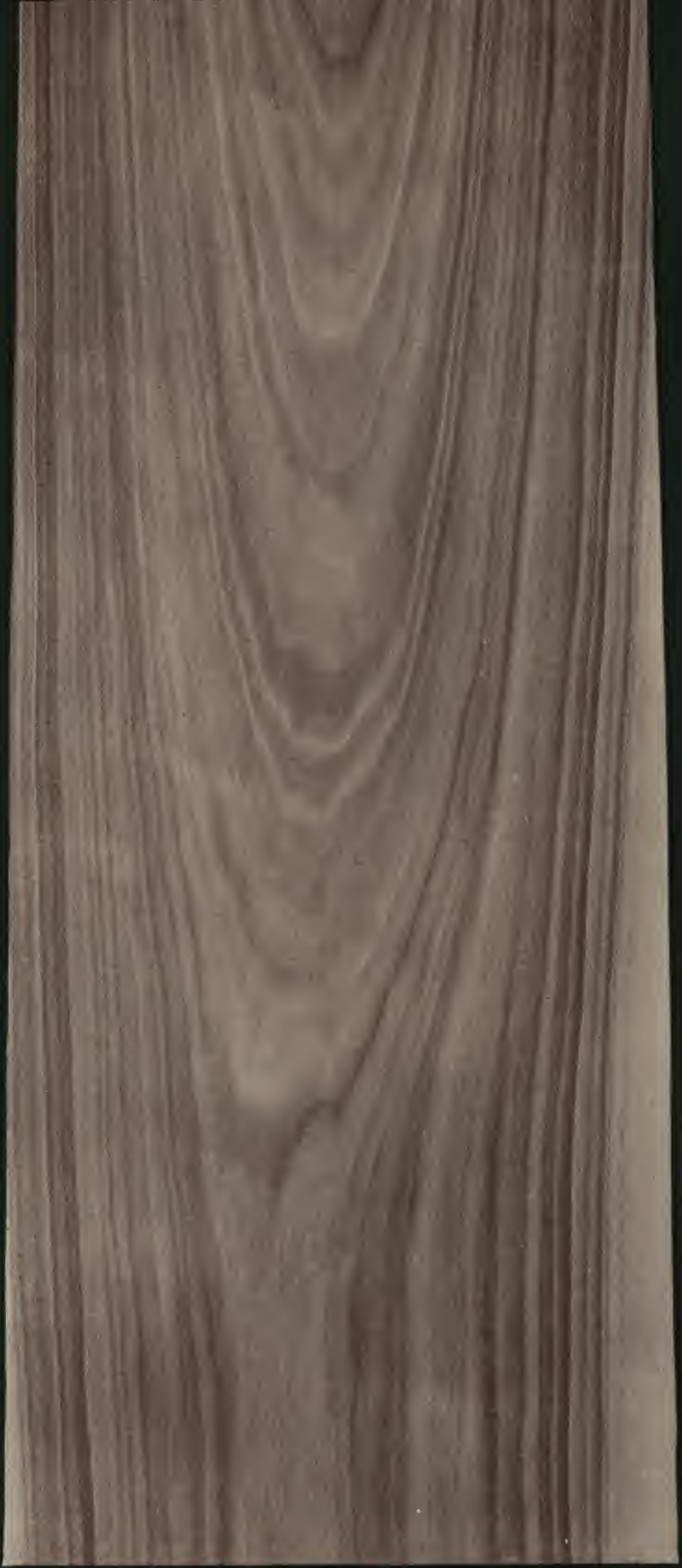
2. Plain Sliced, Narrow Heart



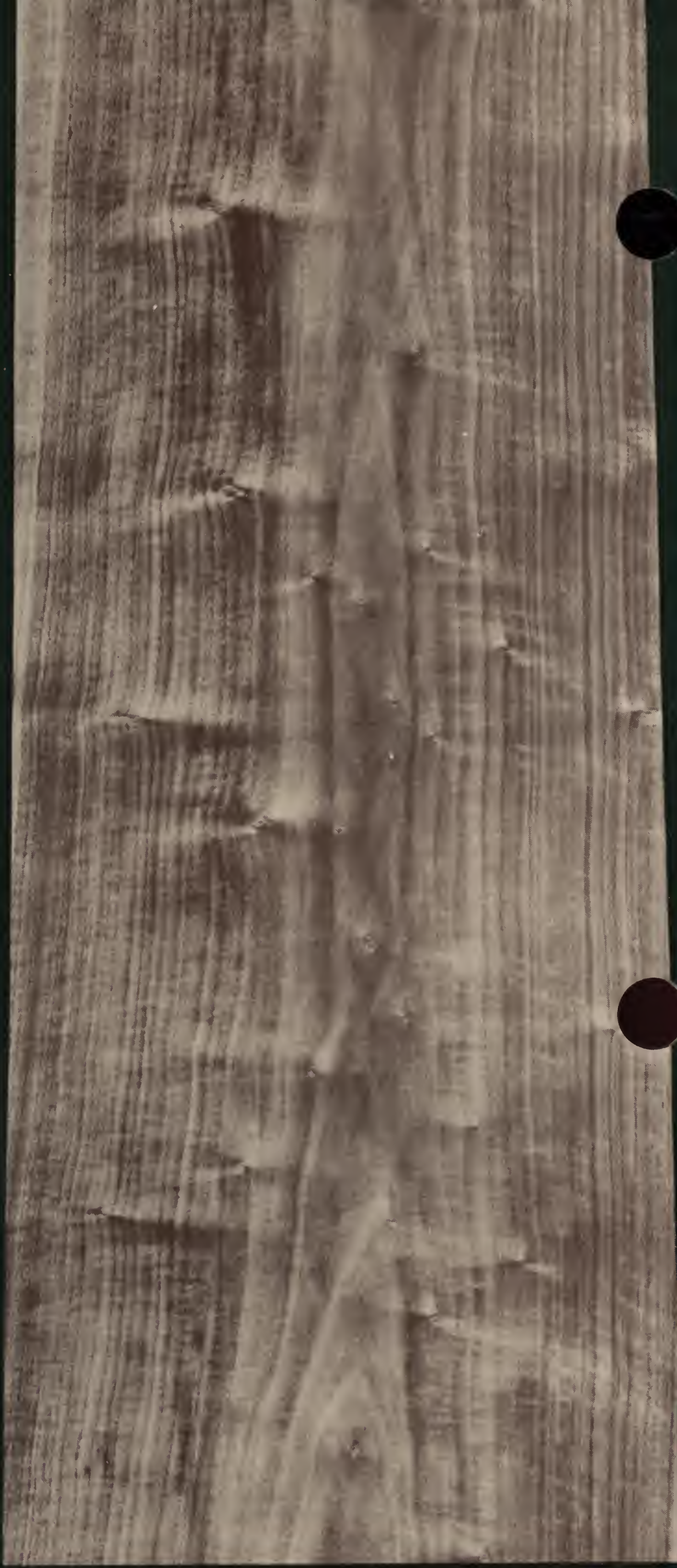
3. Plain Sliced, Wild Heart



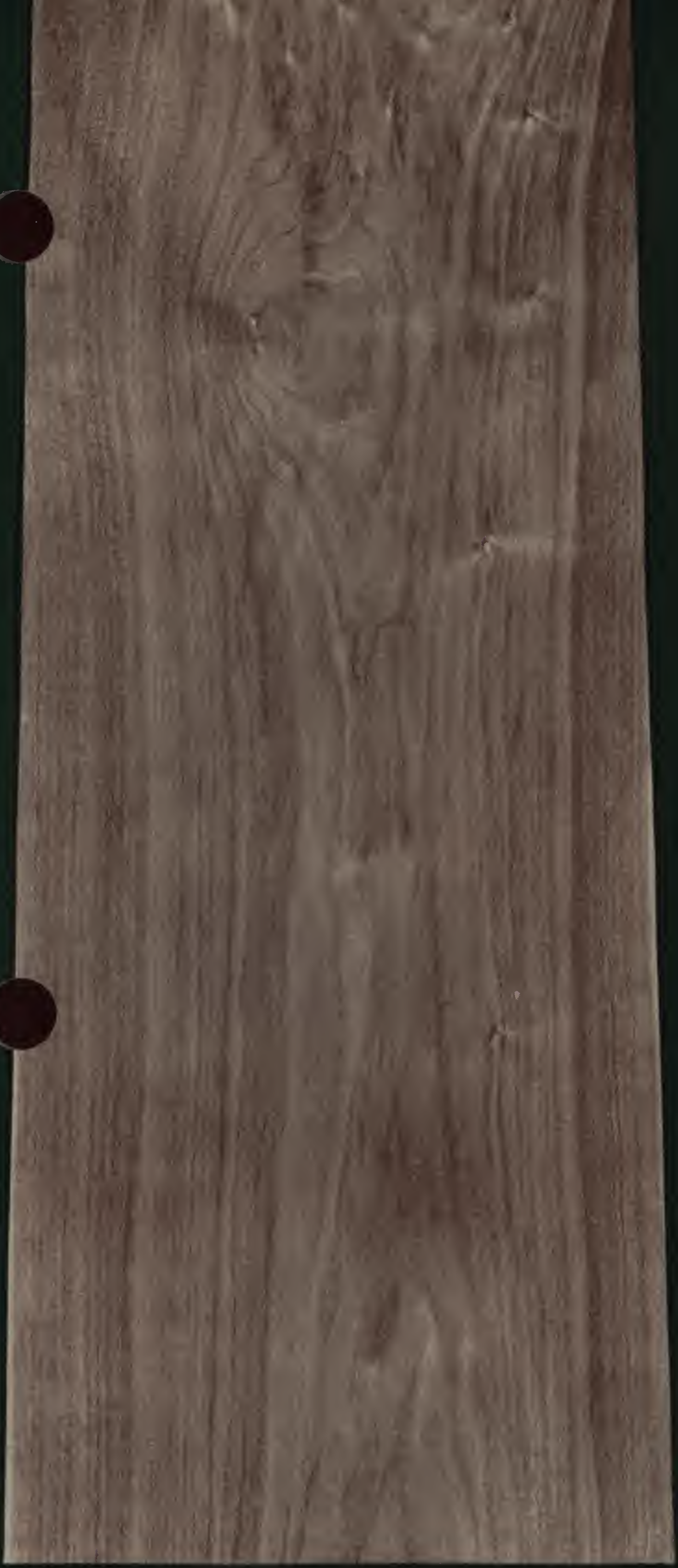
4. Plain Sliced, Contrasty



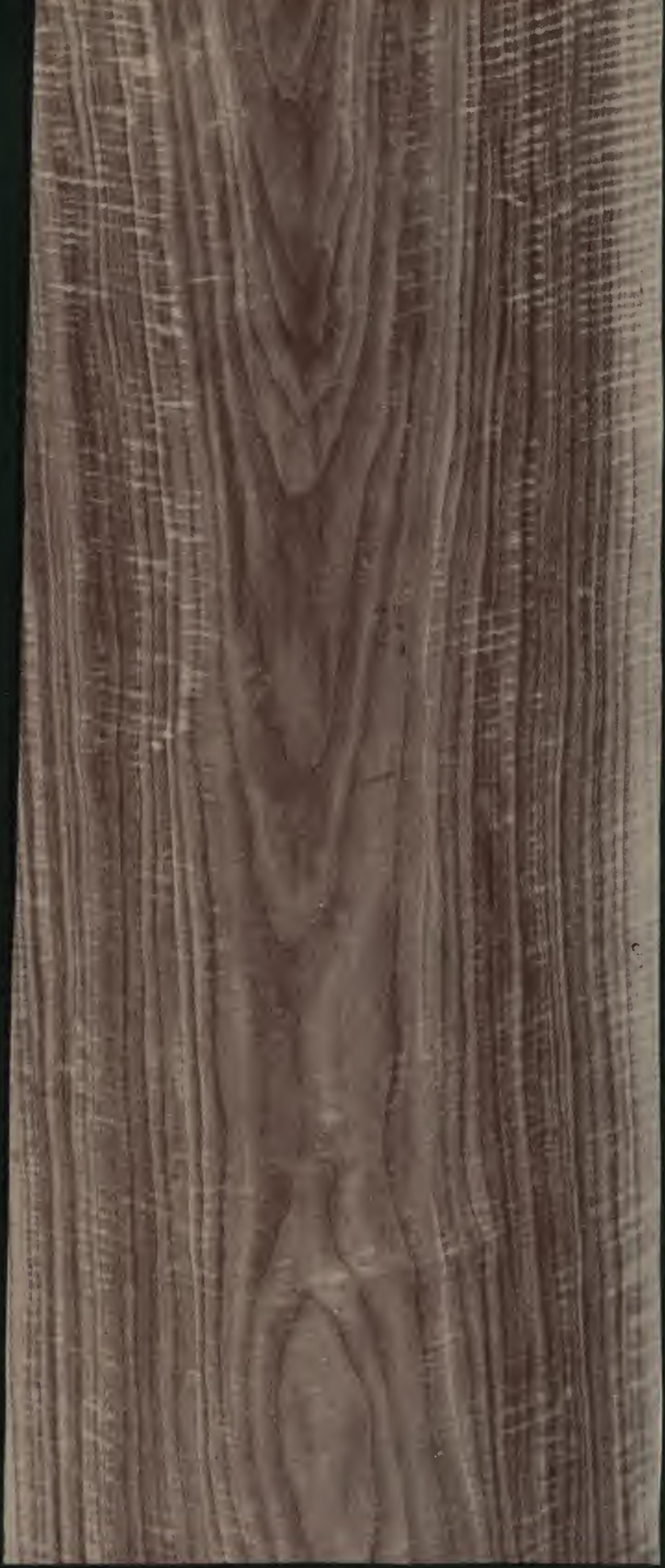
5. Plain Sliced, Leaf or Shell Figure



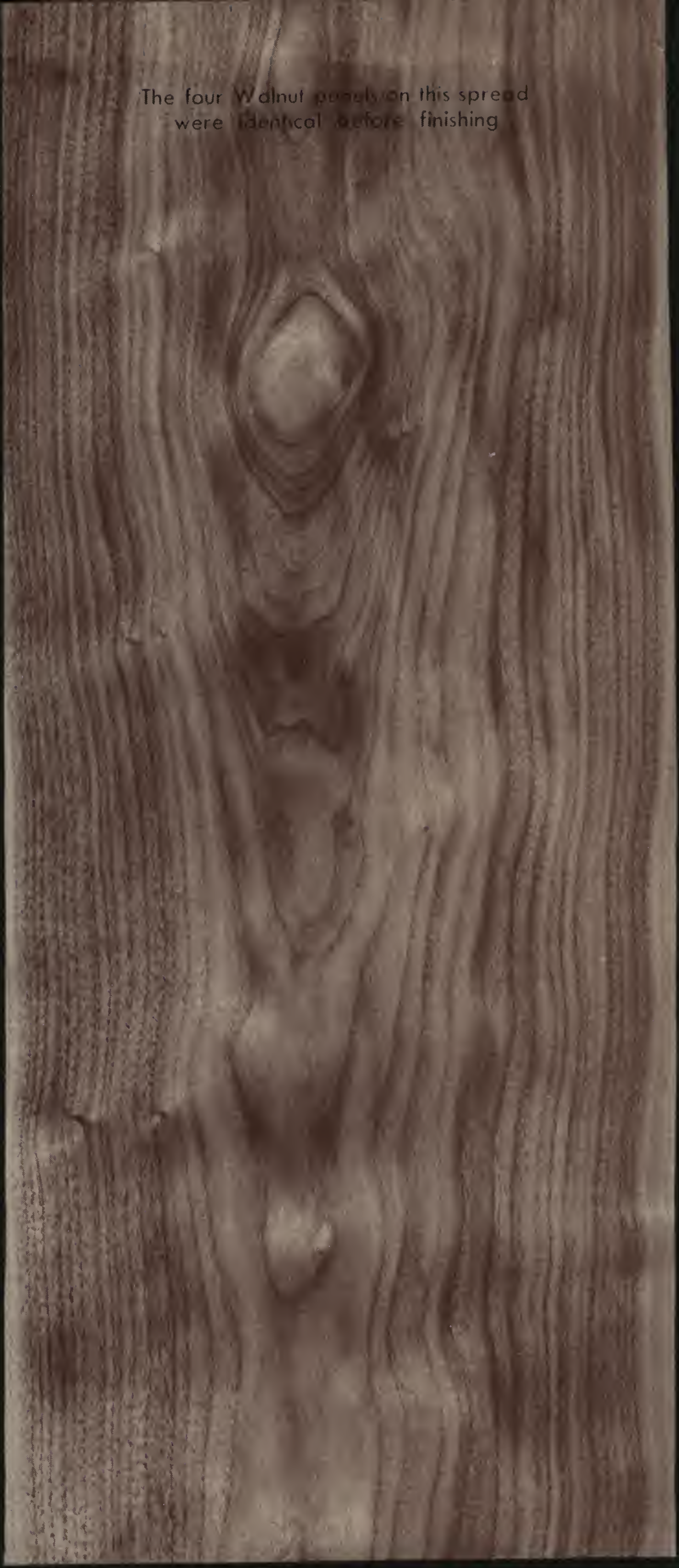
6. Plain Sliced, Narrow Heart, Pinknotty



7. Plain Sliced, Modest Pinknotty

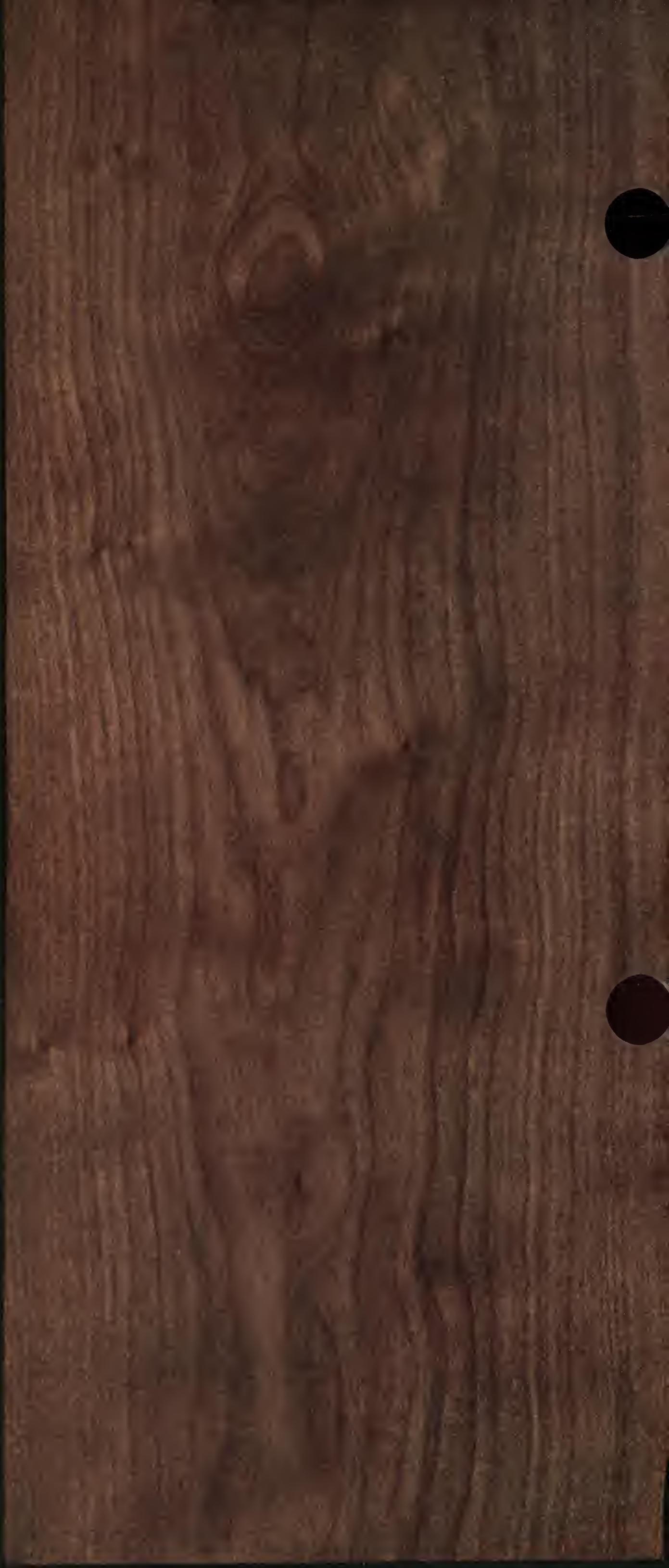


8. Semi-Figured Sliced

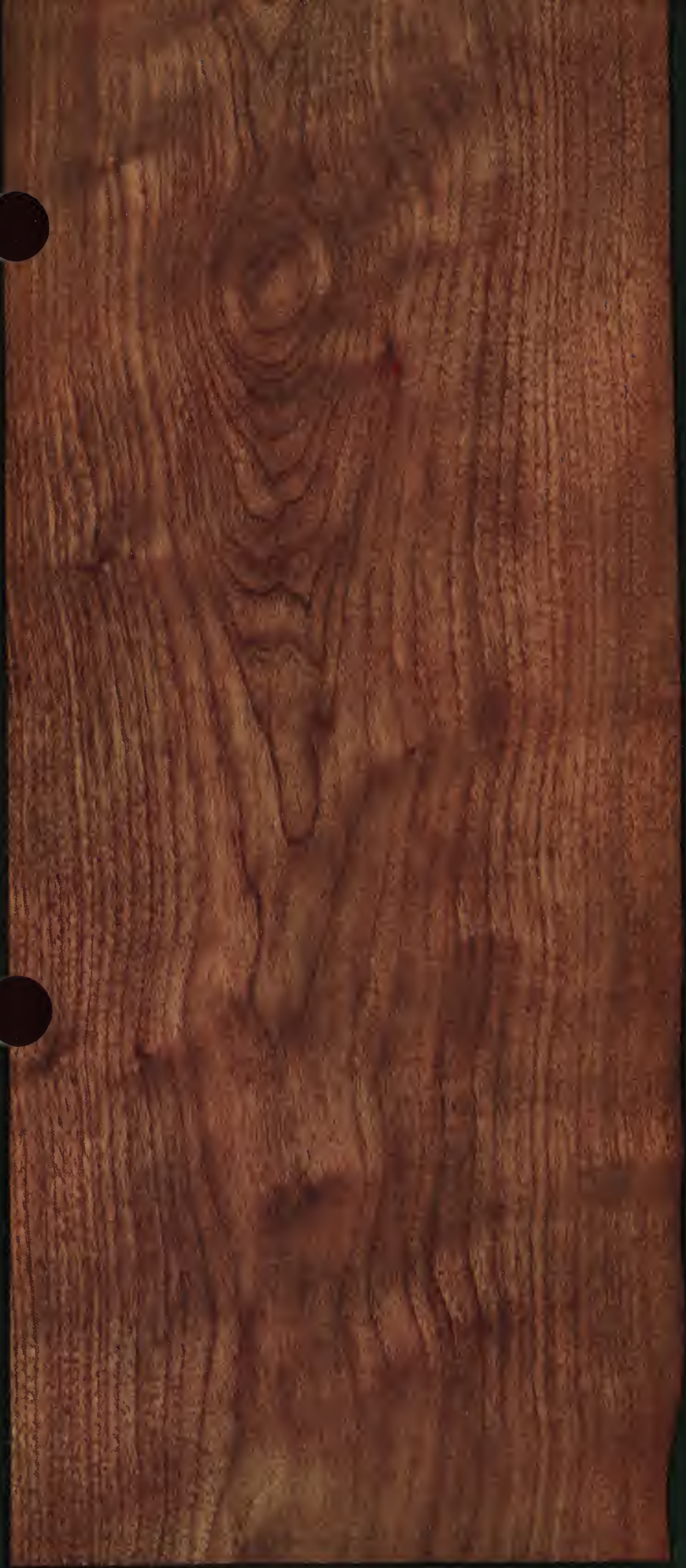


The four Walnut panels on this spread were identical before finishing

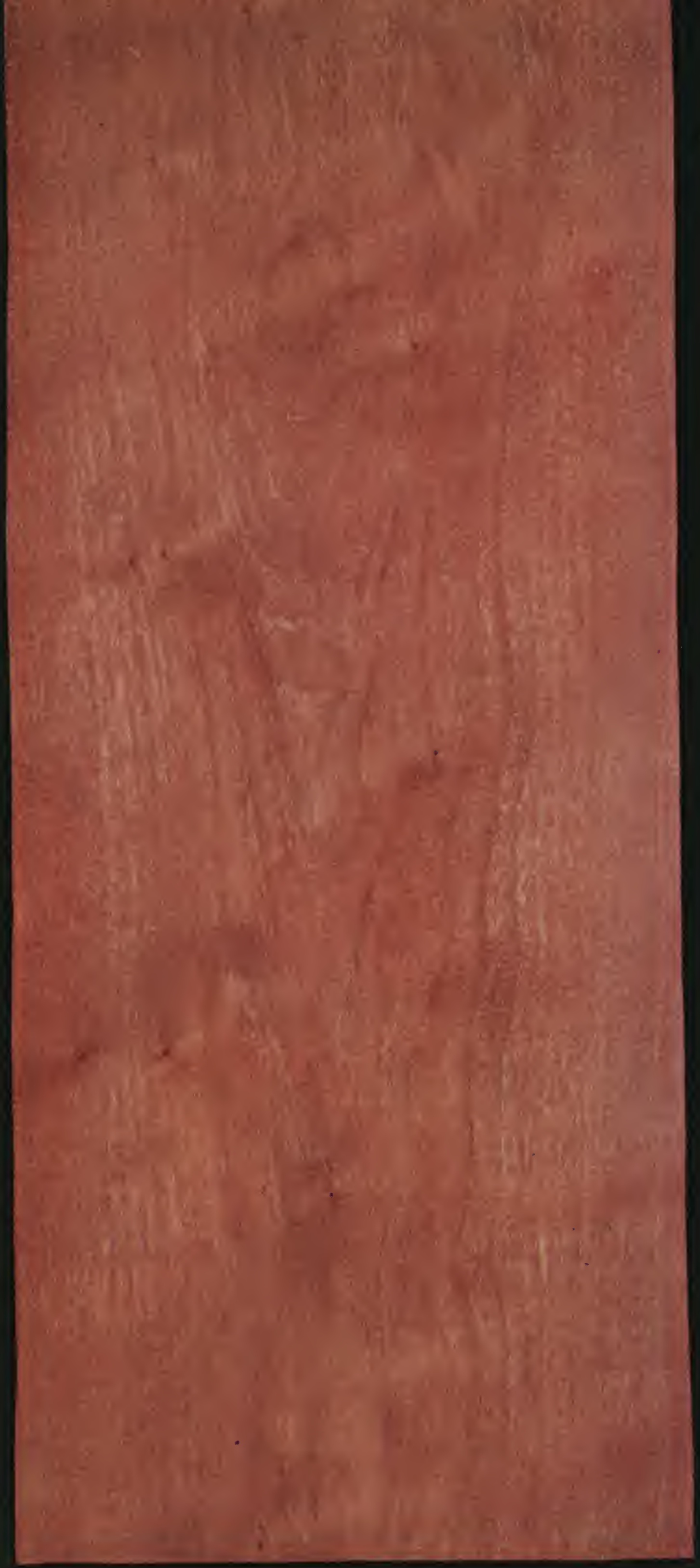
9a. Plain Sliced, Wide Heart, Pinknotty, Unfinished



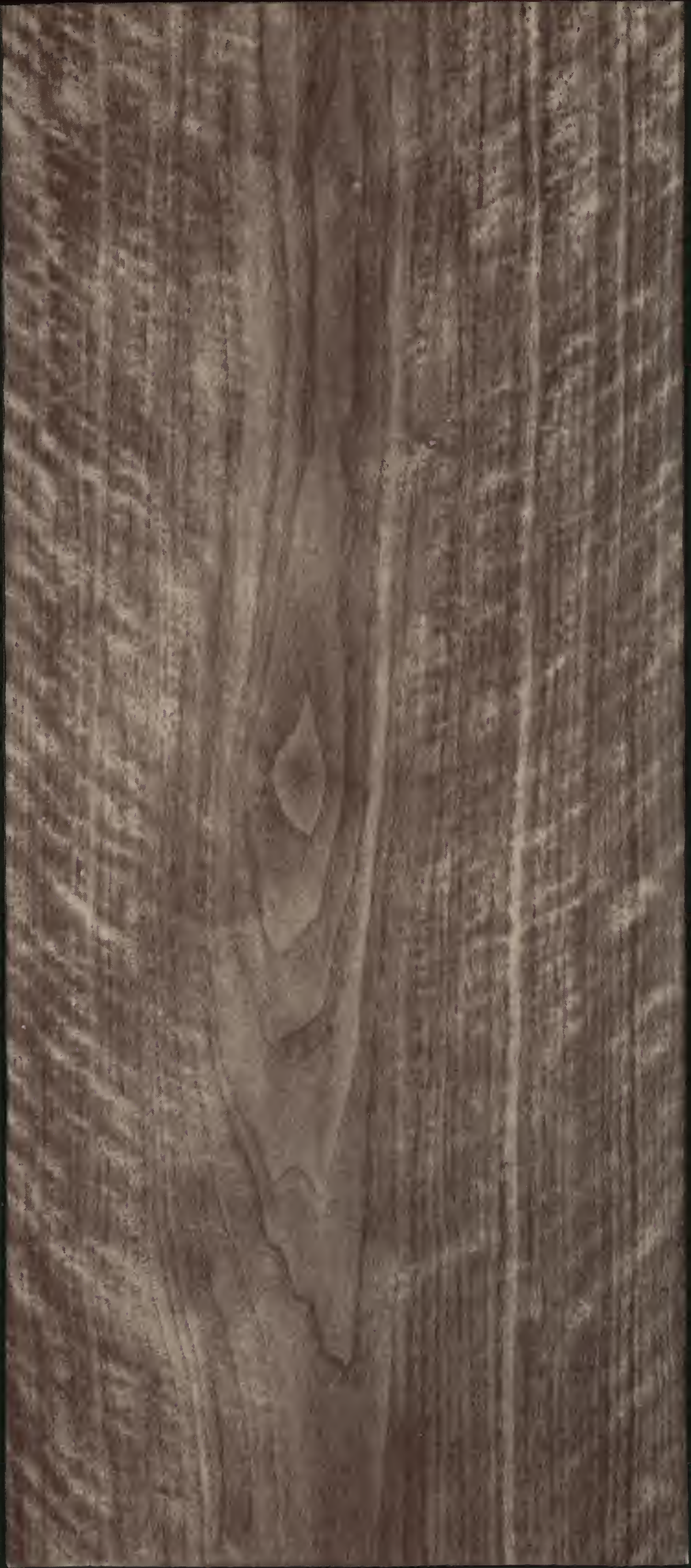
9b. Same Plain Sliced, Wide Heart, Pinknotty, Stained, Filled, Gray-Toner Finish



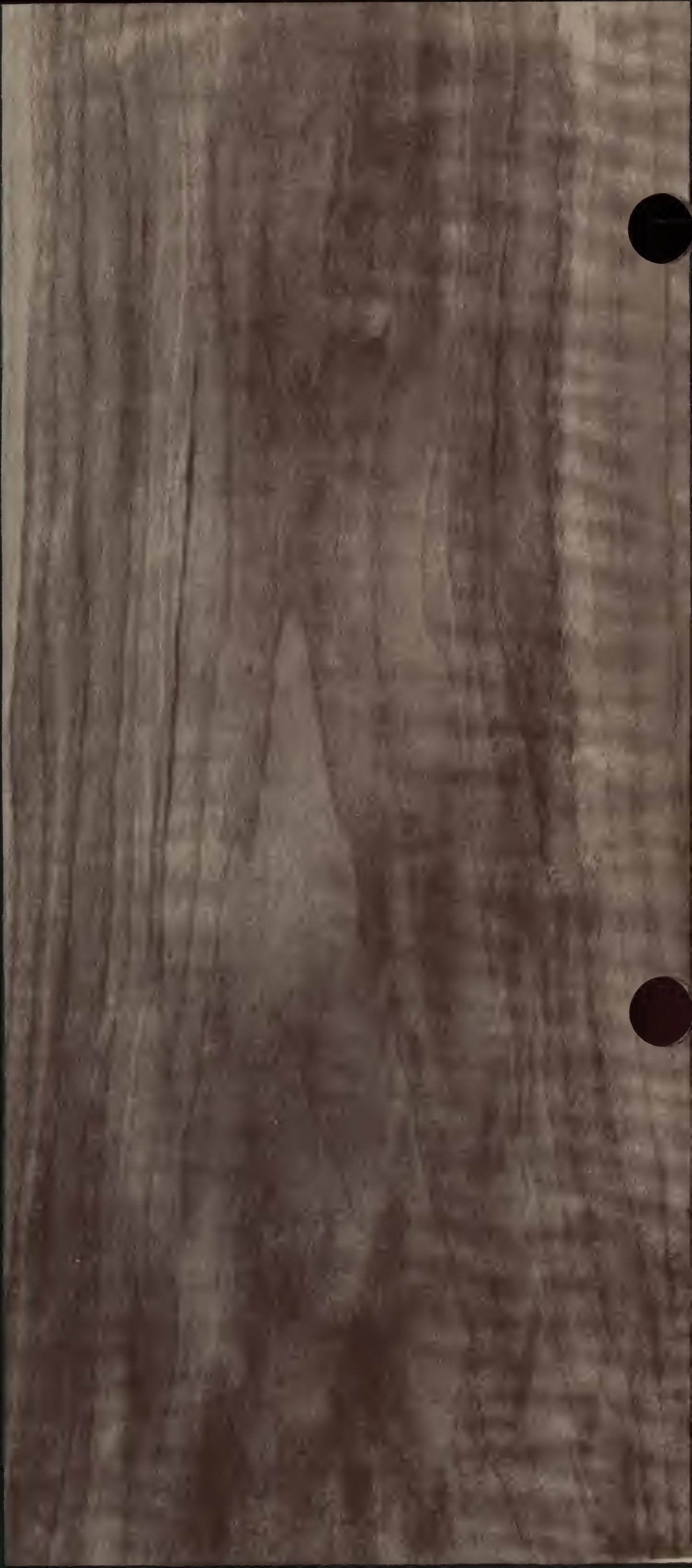
9c. Same Plain Sliced, Wide Heart, Pinknotty, Stained, Filled, Warm Brown Finish



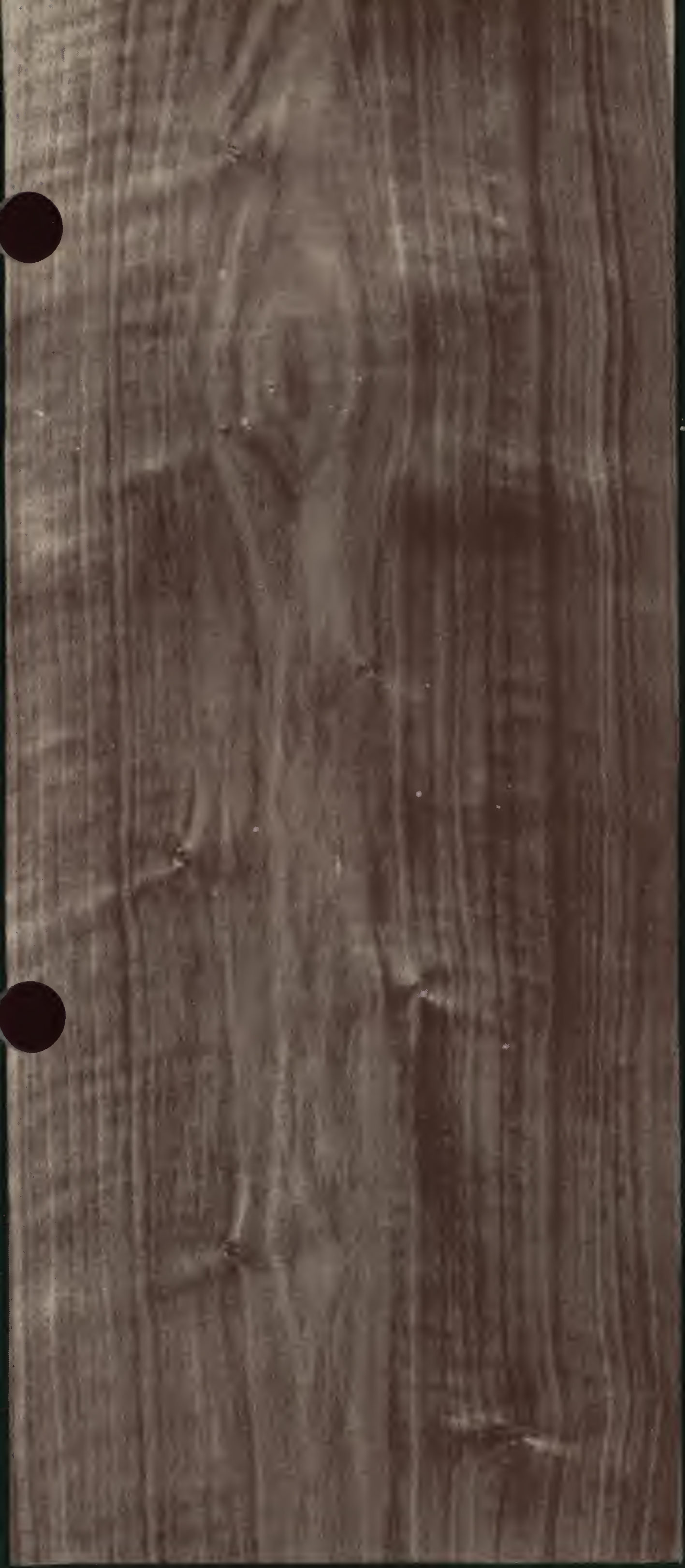
9d. Same Plain Sliced, Wide Heart, Pinknotty, Stained, Filled, Pinktone Finish



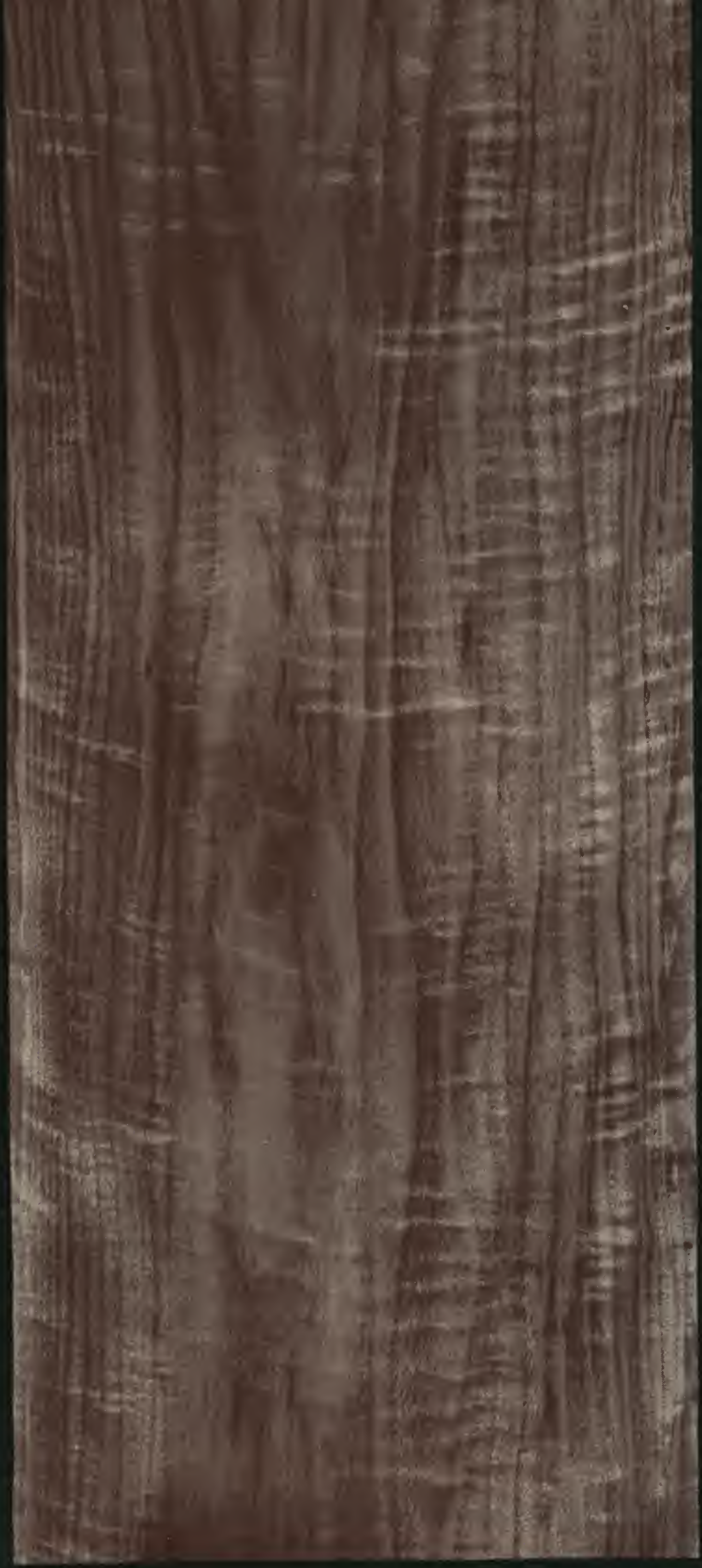
10. Semi-Figured Sliced, Narrow Heart, Mottled Figure



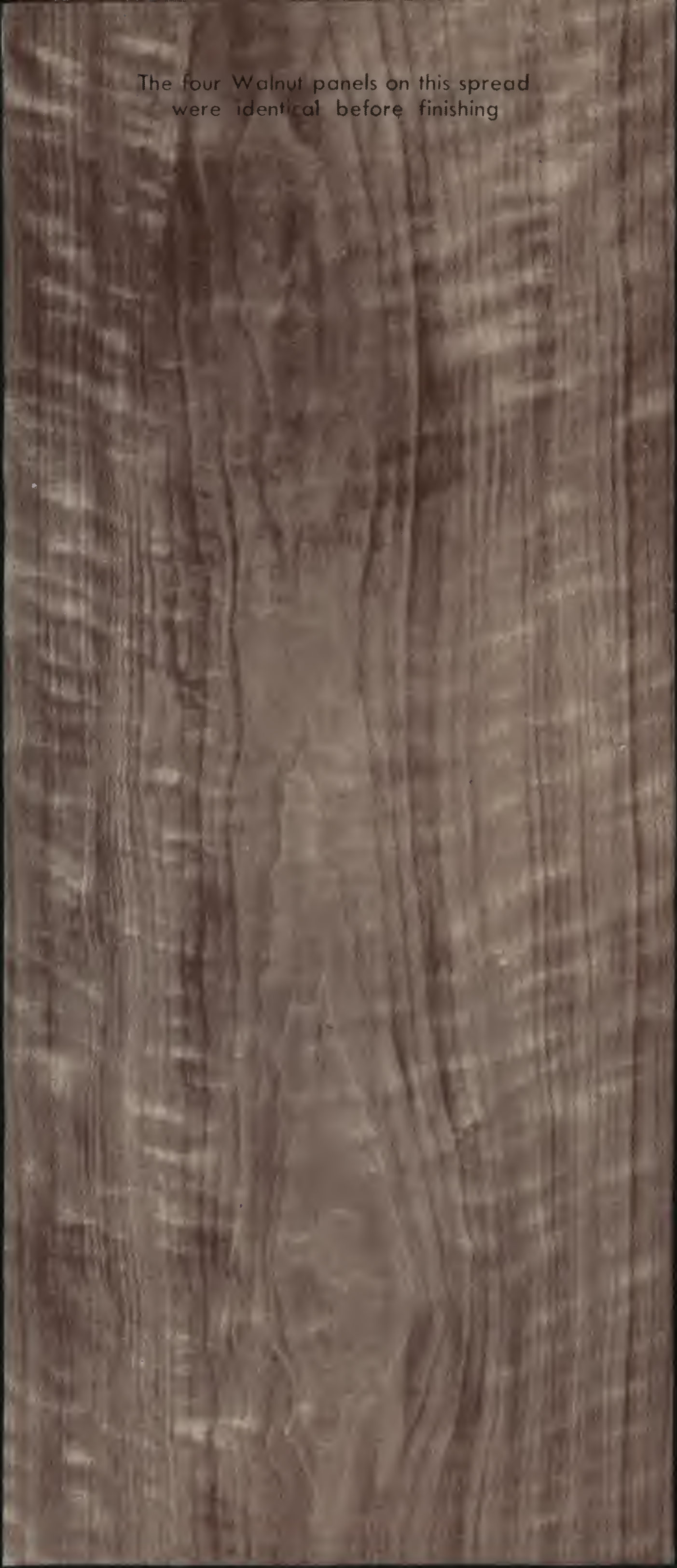
11. Semi-Figured Sliced, Wild Heart



12. Semi-Figured Sliced, Pinknotty

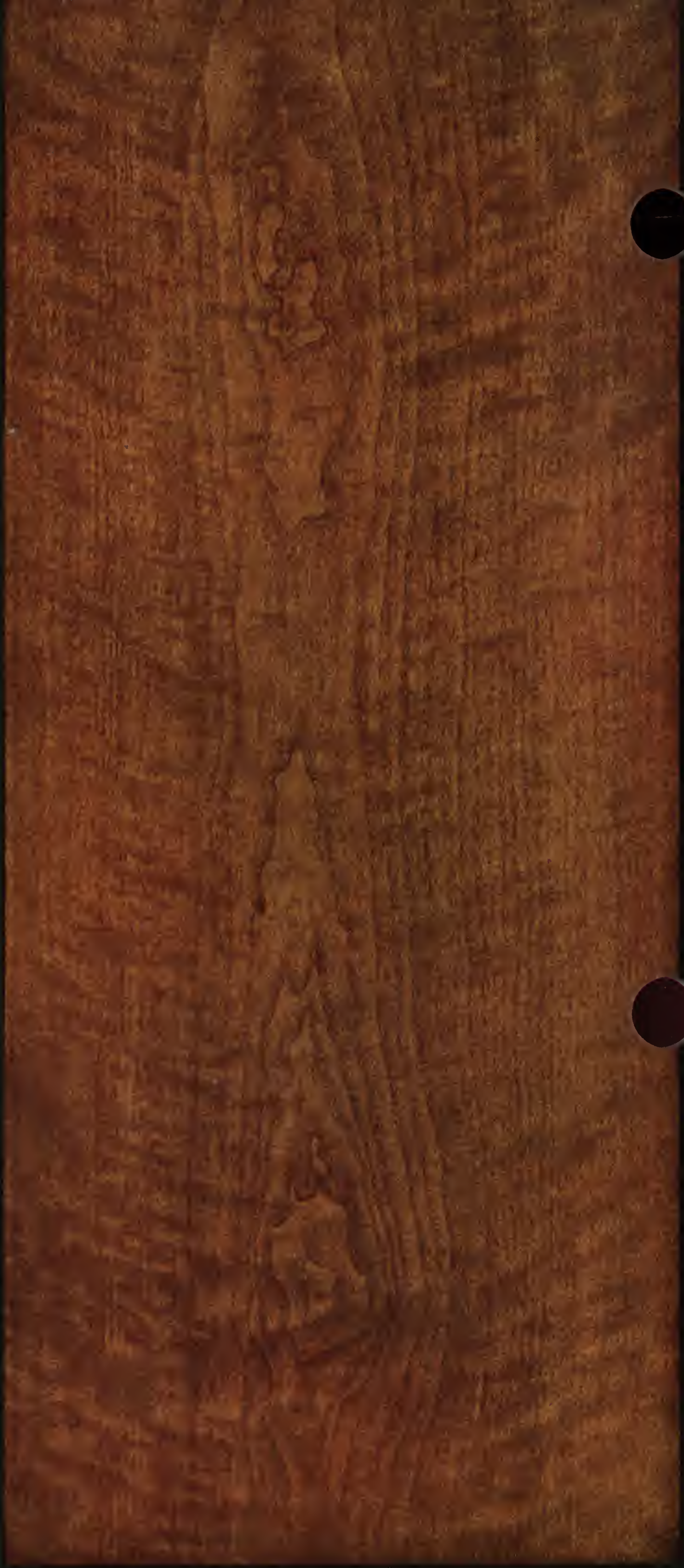


13. Figured Sliced, Wild Heart

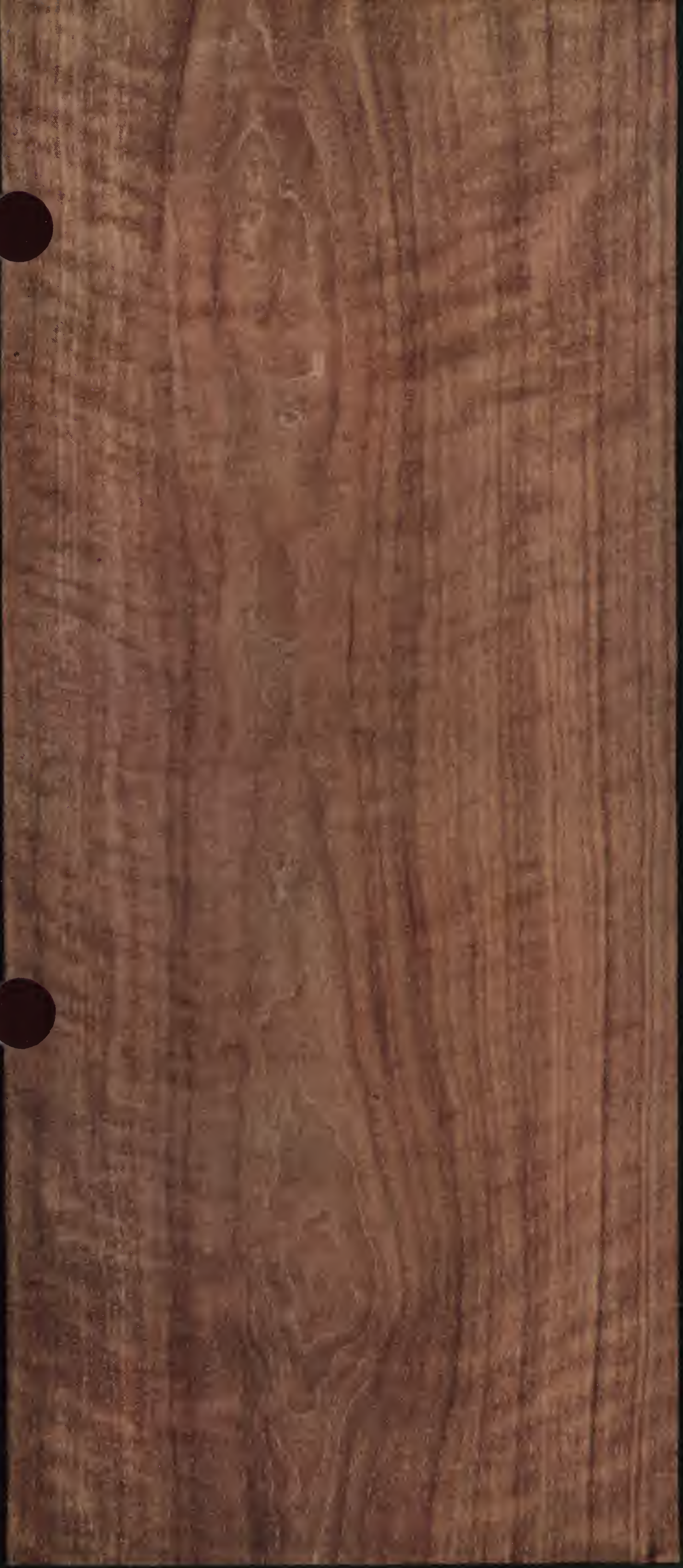


The four Walnut panels on this spread were identical before finishing

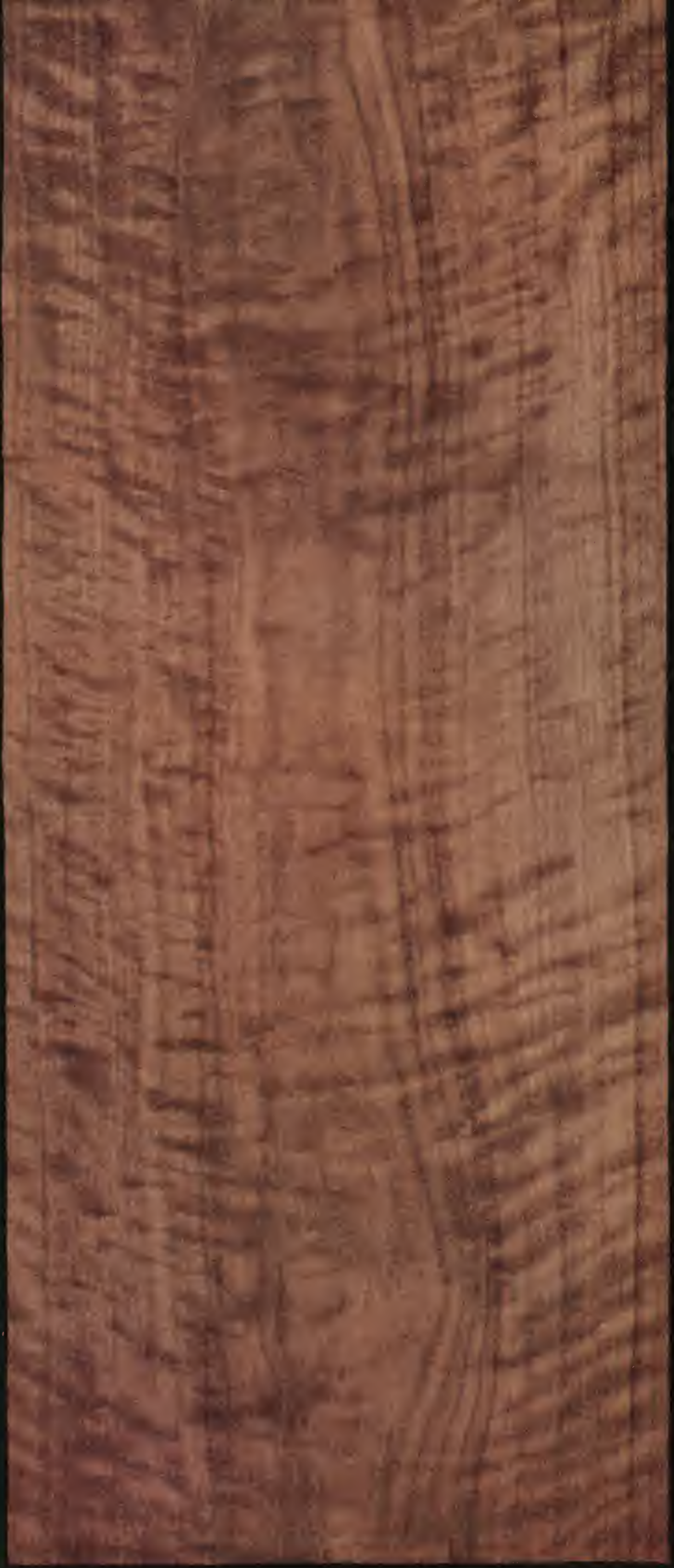
14a. Figured Sliced, Unfinished



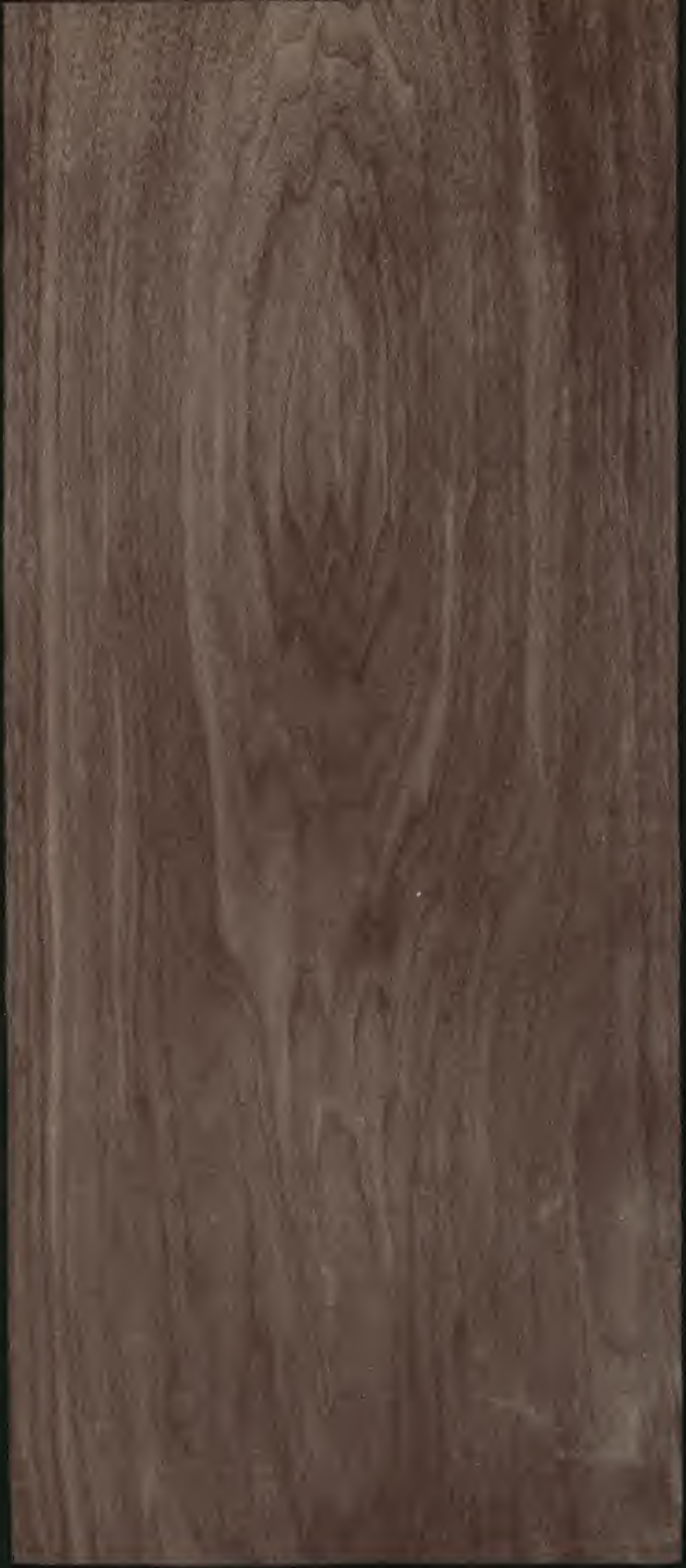
14b. Same Figured Sliced, Bleached, Stained, Filled, "Champagne" Finish



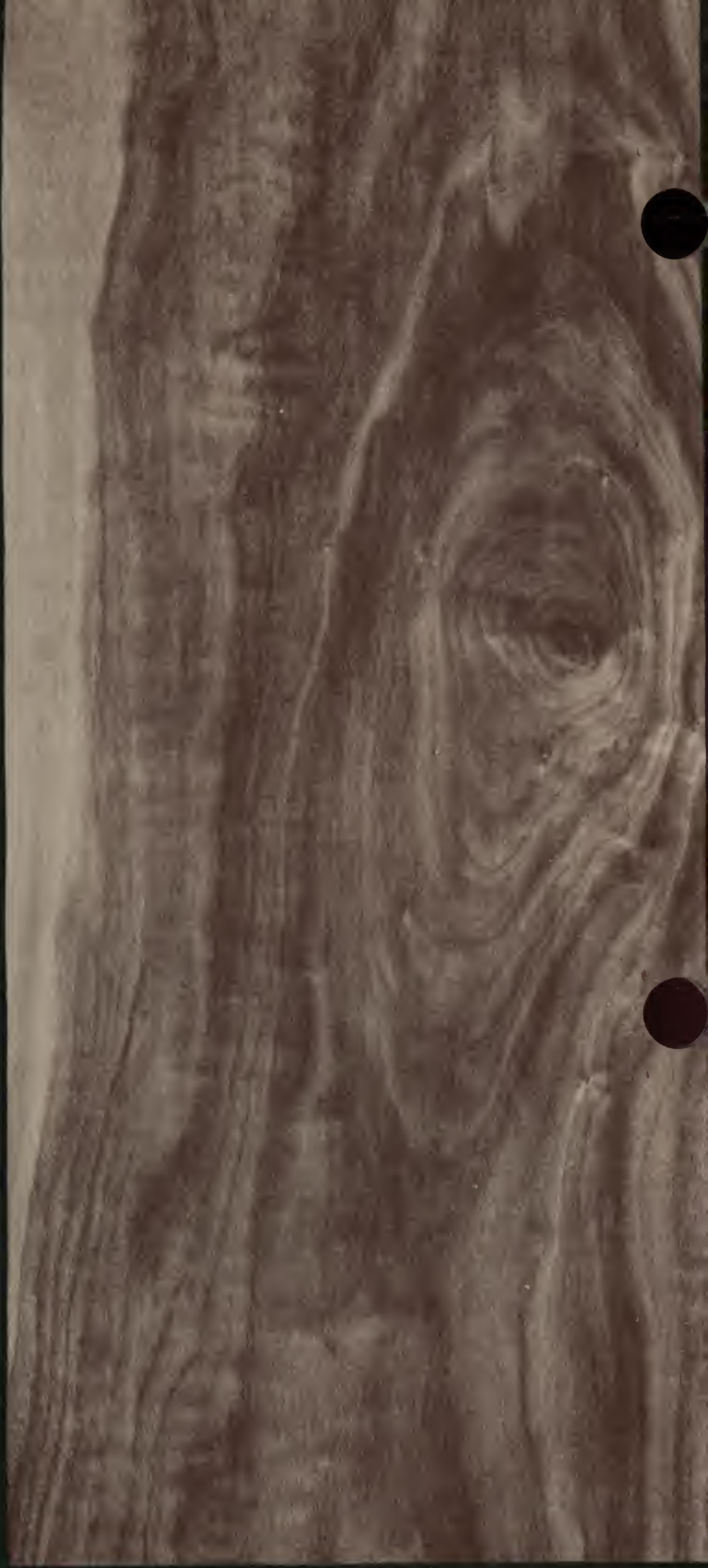
14c. Same Figured Sliced, Filled, Gray Tone Finish



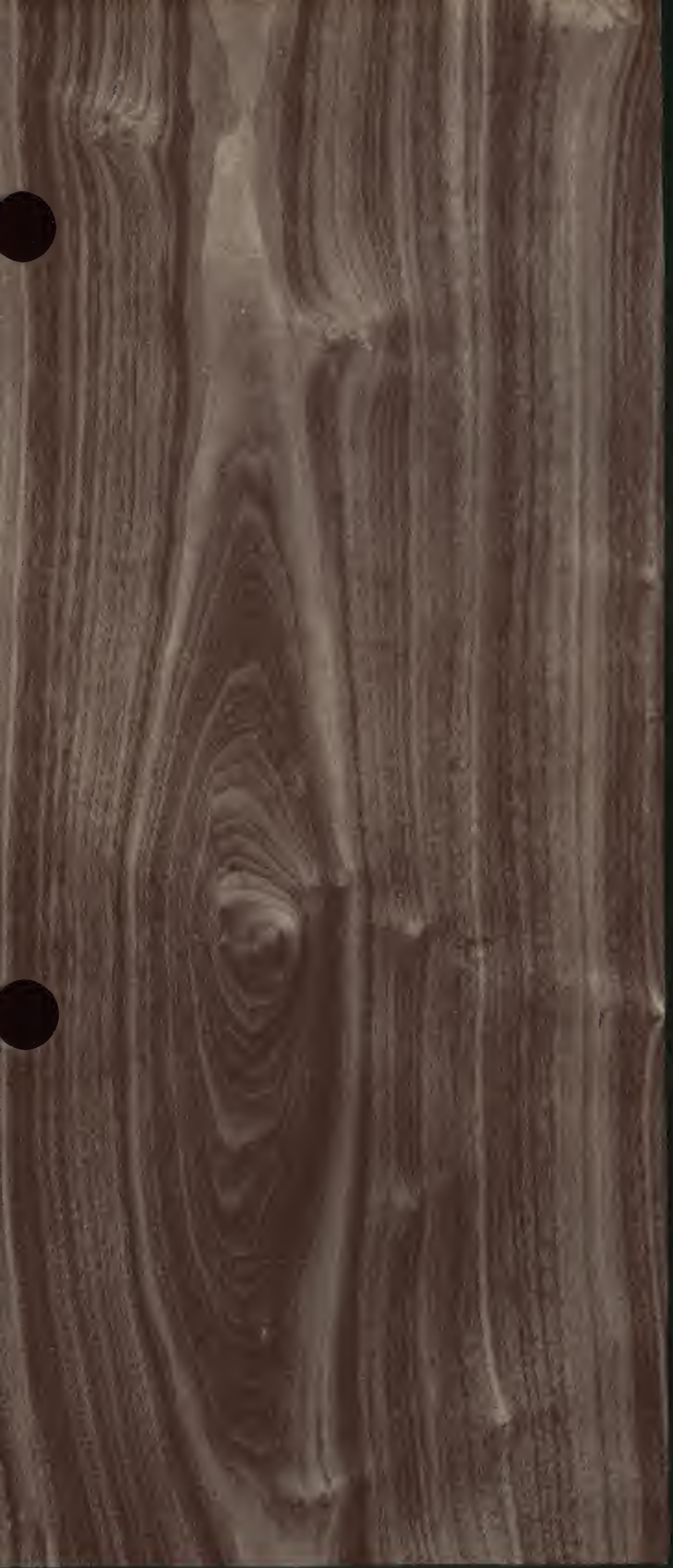
14d. Same Figured Sliced, Filled, Rose Tone Finish



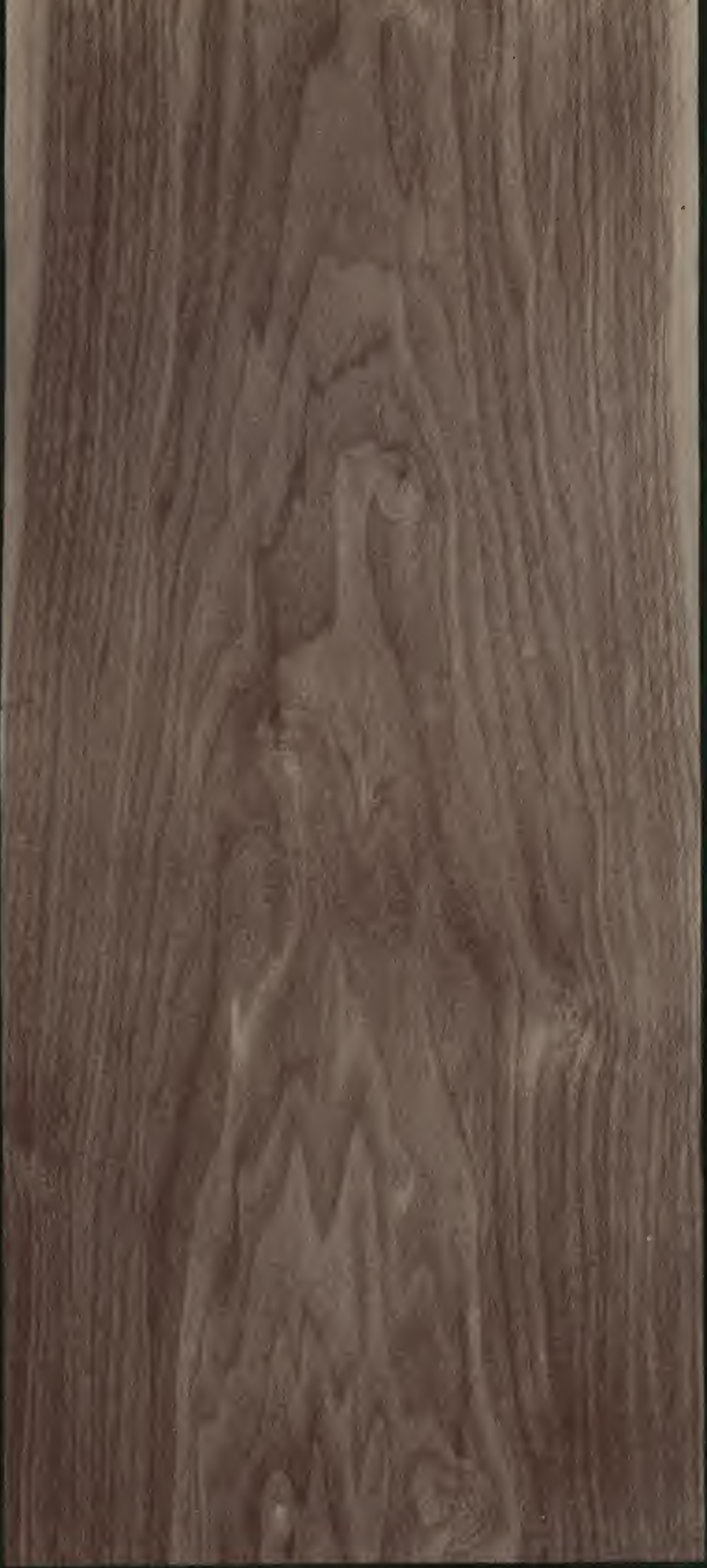
15. Plain Half-Round



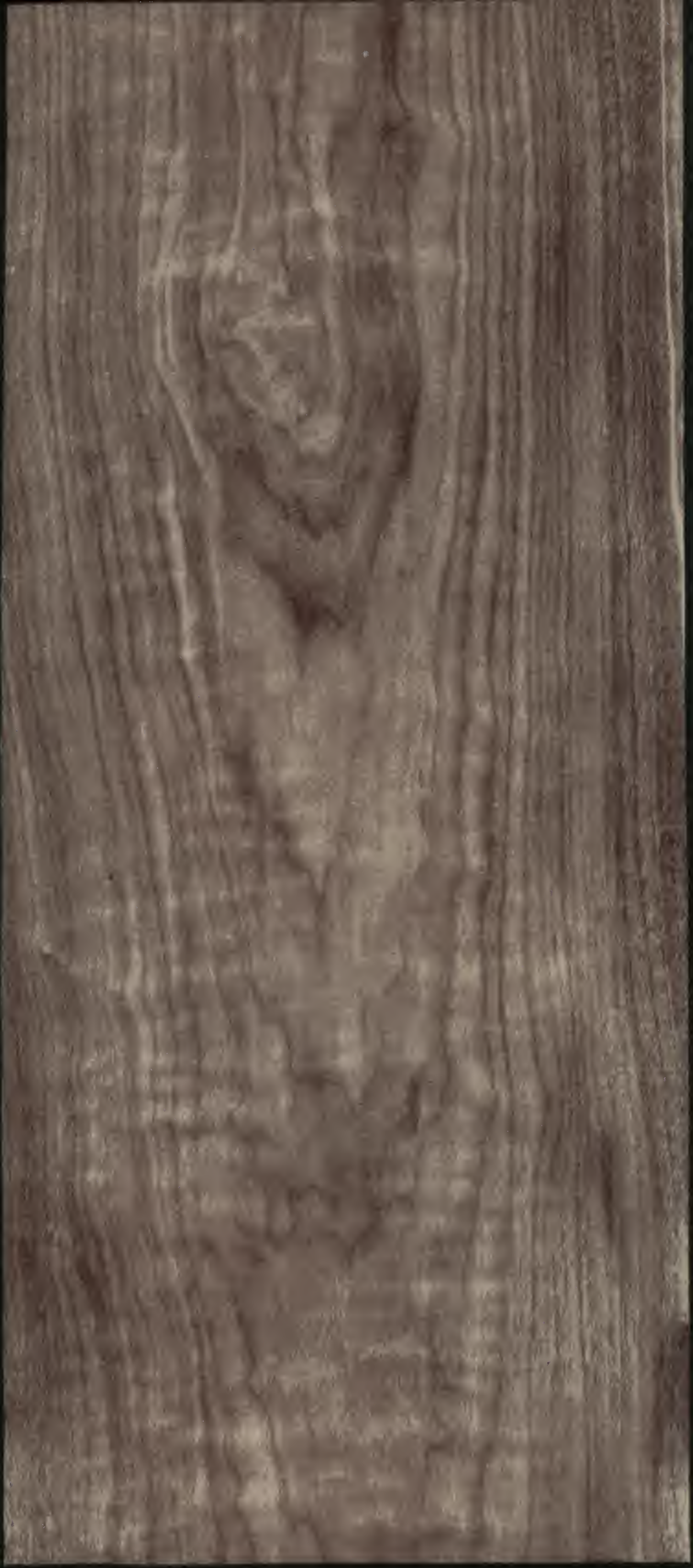
16. Plain Half-Round, Wild Grain



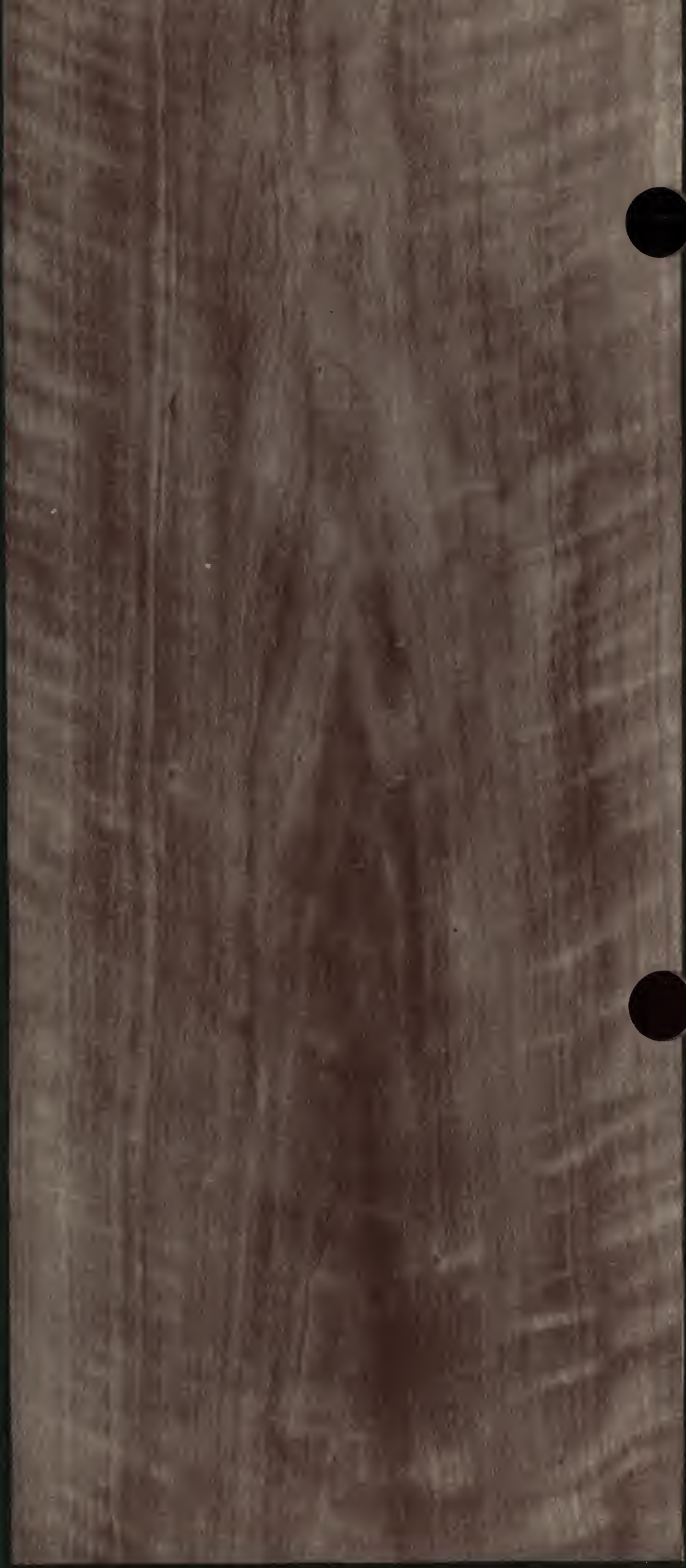
17. Plain Half-Round, Contrasty, Pinknotty



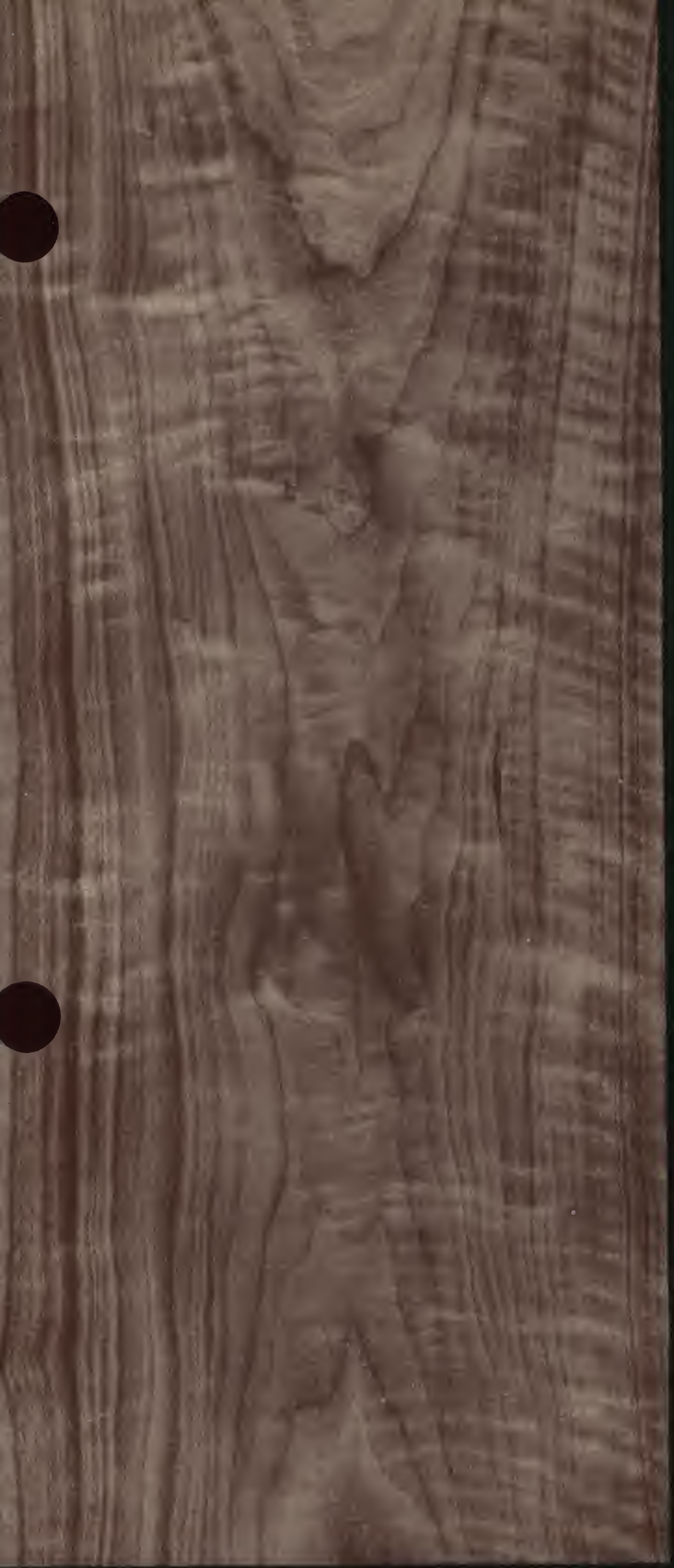
18. Plain Half-Round, Pinknotty



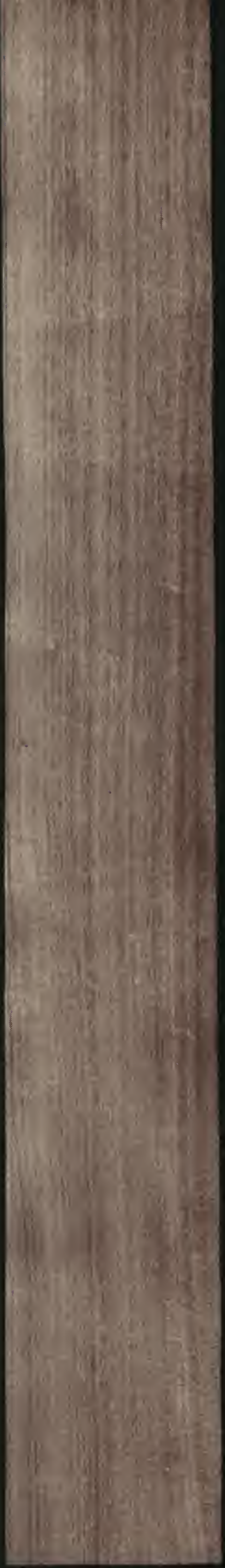
19. Semi-Figured, Half-Round



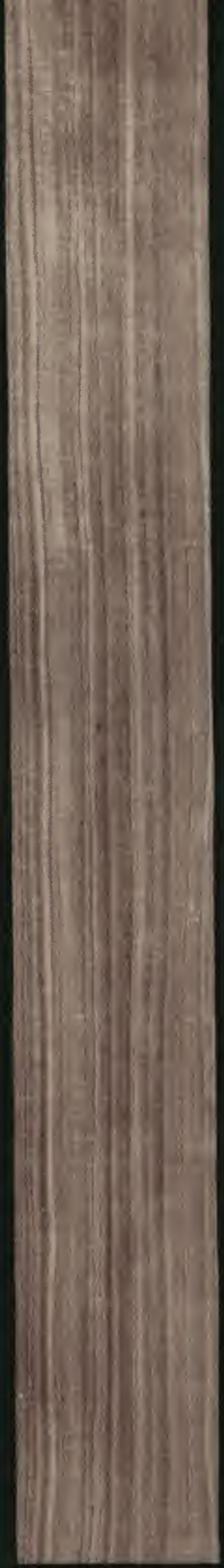
20. Semi-Figured, Half-Round, Pinknotty



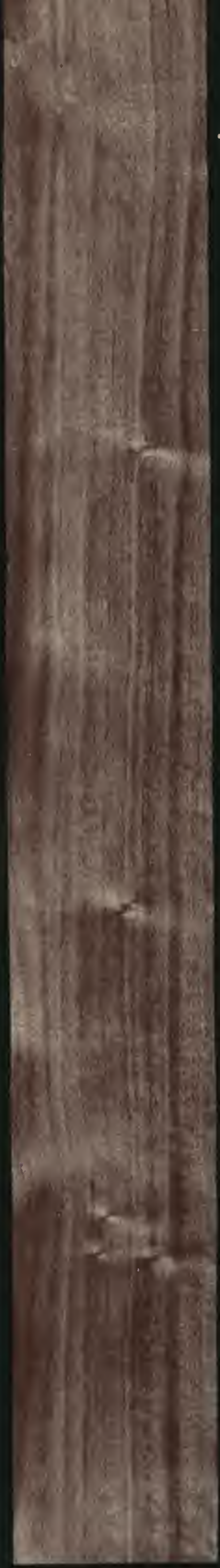
21. Figured Half-Round, Contrasty



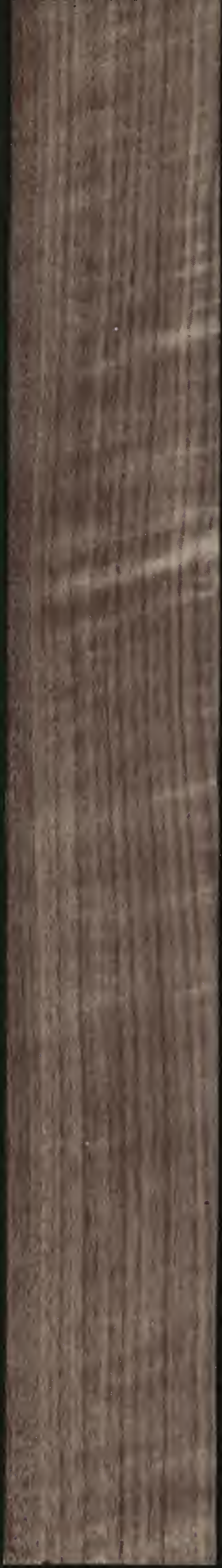
22. Plain Quartered, Flat Character



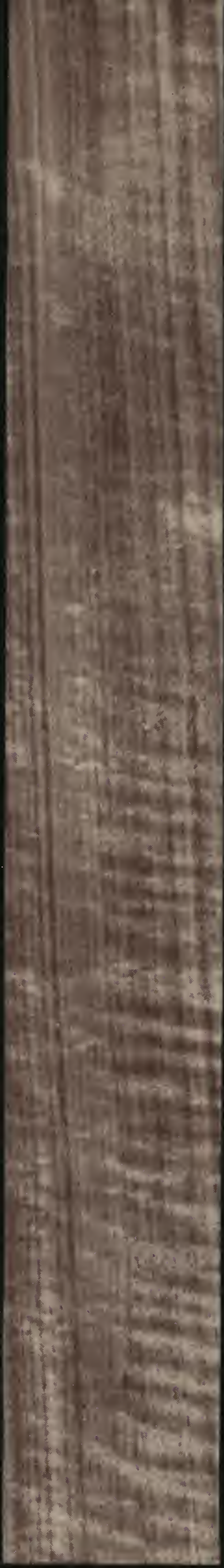
23. Plain Quartered, Stripy and Broad Character



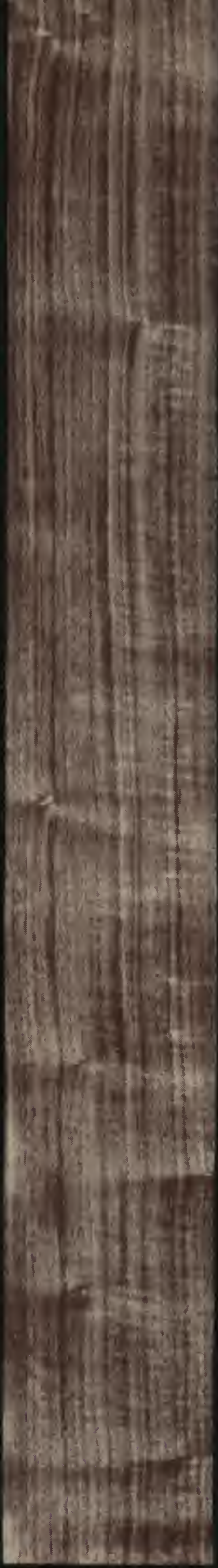
24. Plain Quartered, Pinknotty



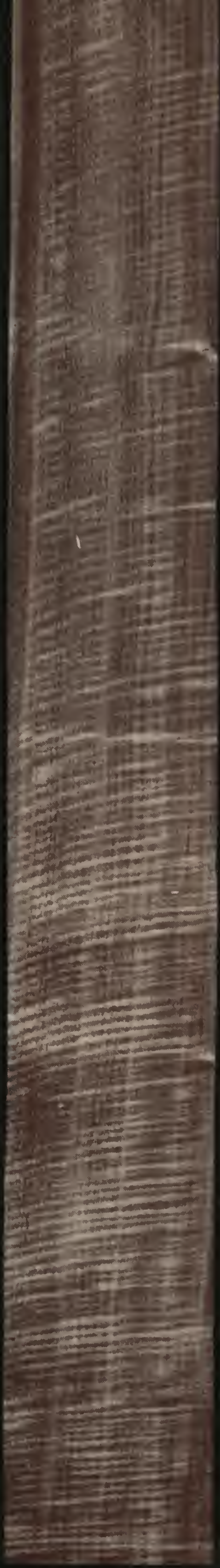
25. Semi-Figured Quartered, Flat Character



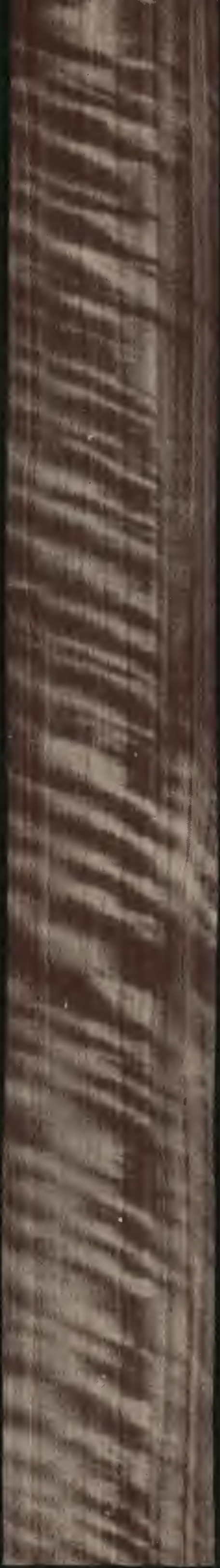
26. Semi-Figured Quartered, Stripy



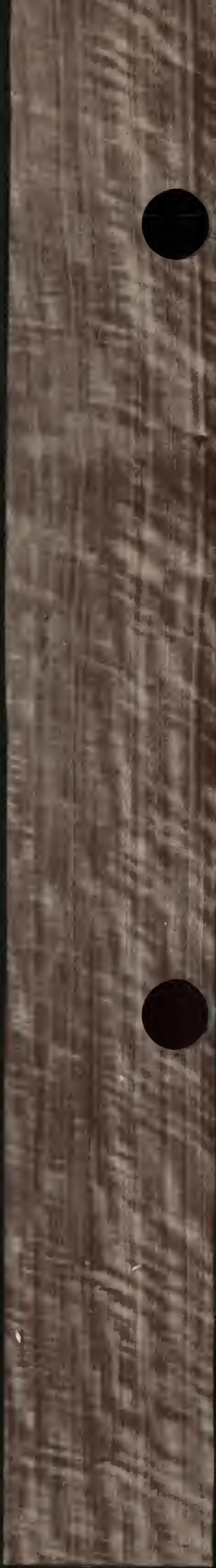
27. Semi-Figured Quartered, Stripy, Pinknotty



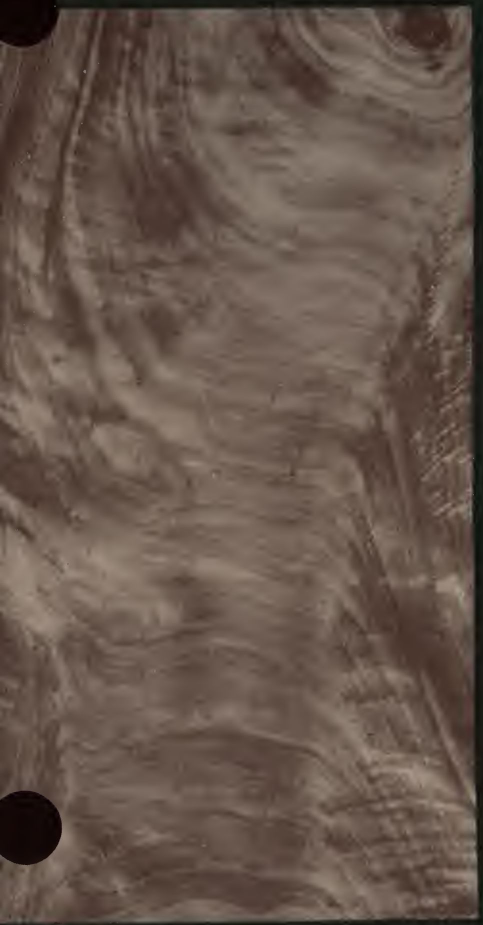
28. Figured Quartered, Fiddle Back

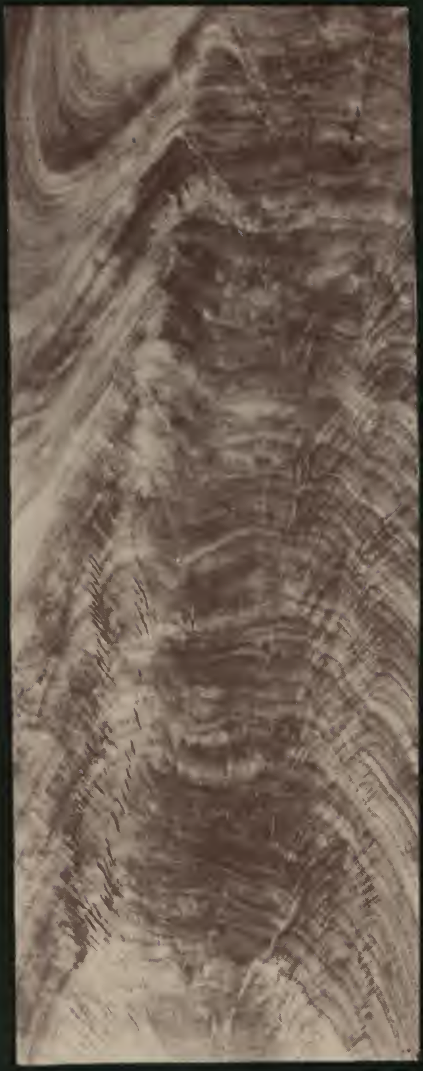


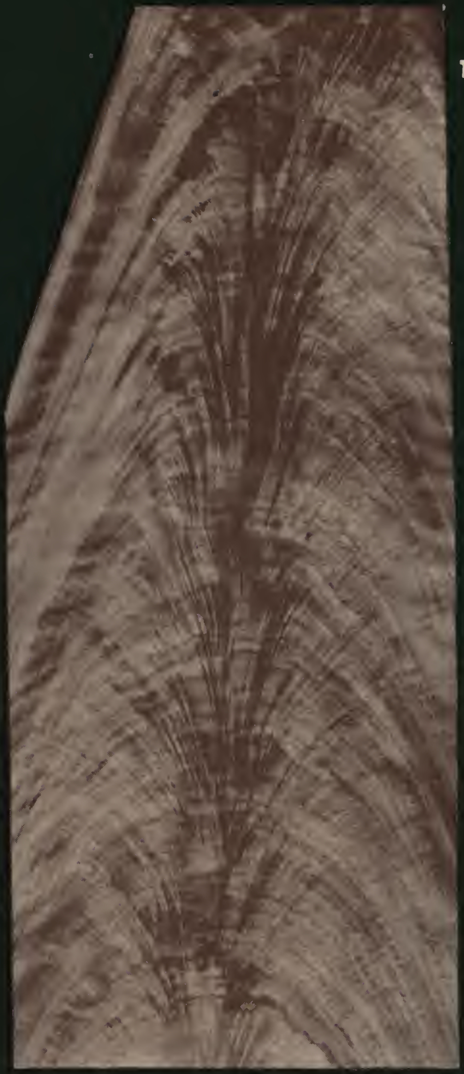
29. Figured Quartered, Roll Figure



30. Figured Quartered, Mottled Figure





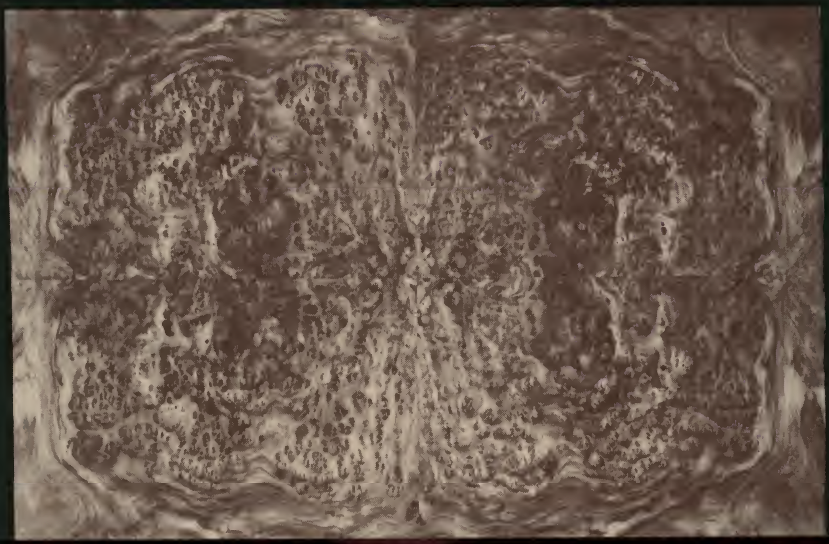


Above 31. Crotch Swirl

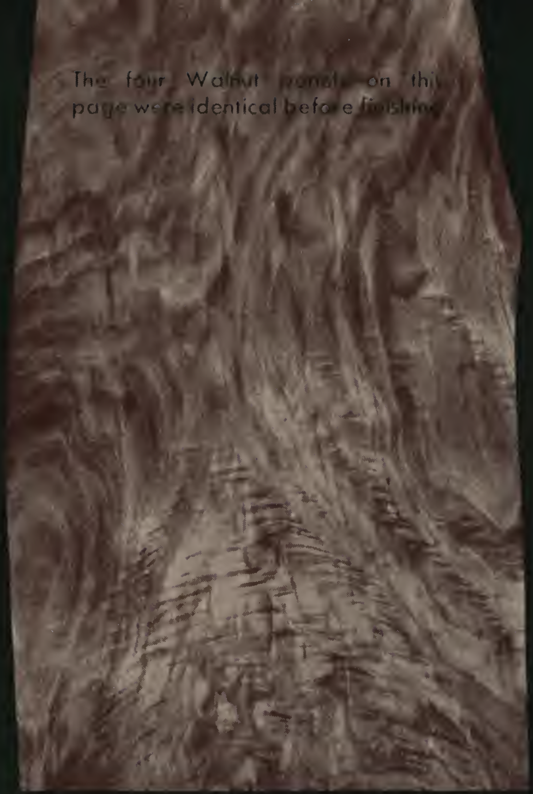
Above Center 32. Moonshine Crotch

Above Right 33. Feather Crotch

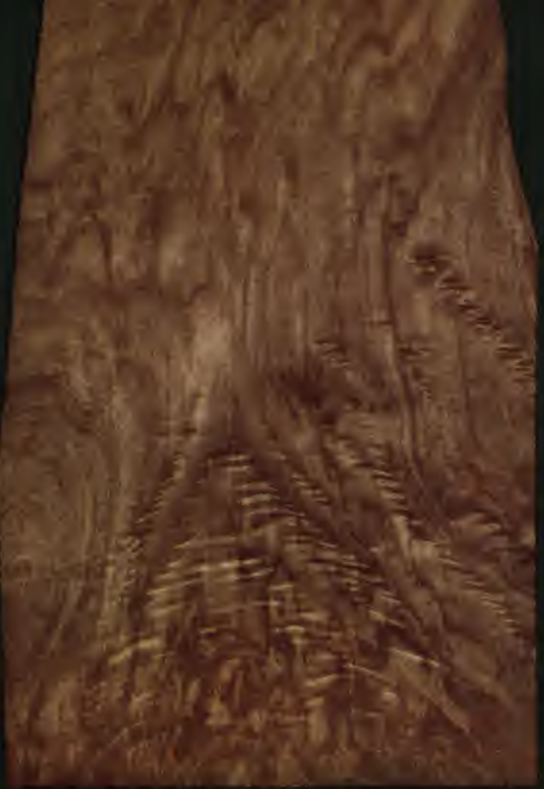
Right 34. Burl, Four Pieces Matched



The four Walnut panels on this page were identical before finishing

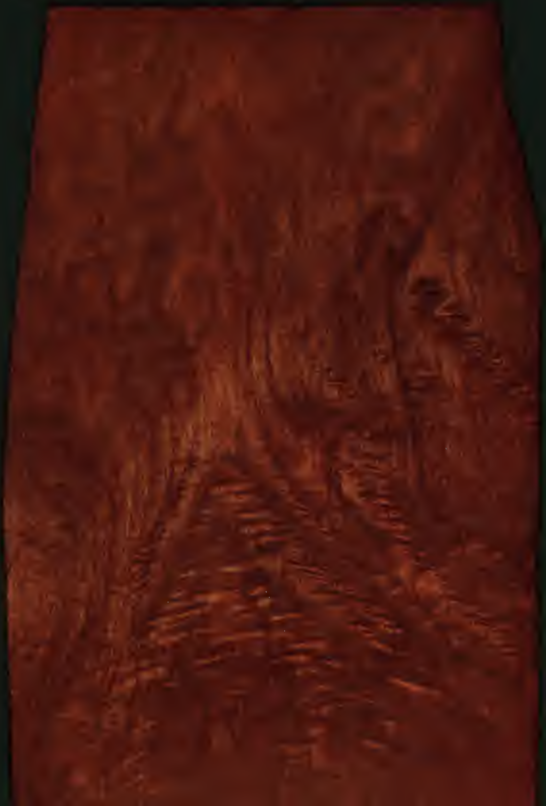


Above 35a. Stumpwood, Mild Figure, Unfinished

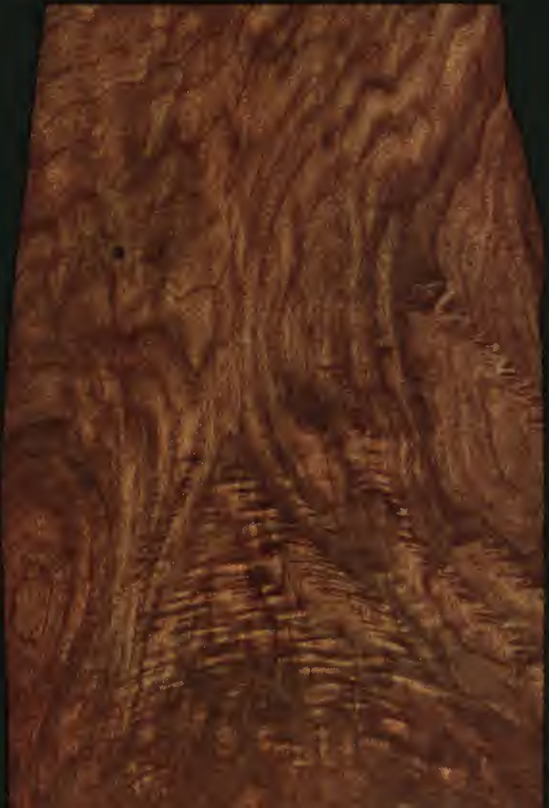


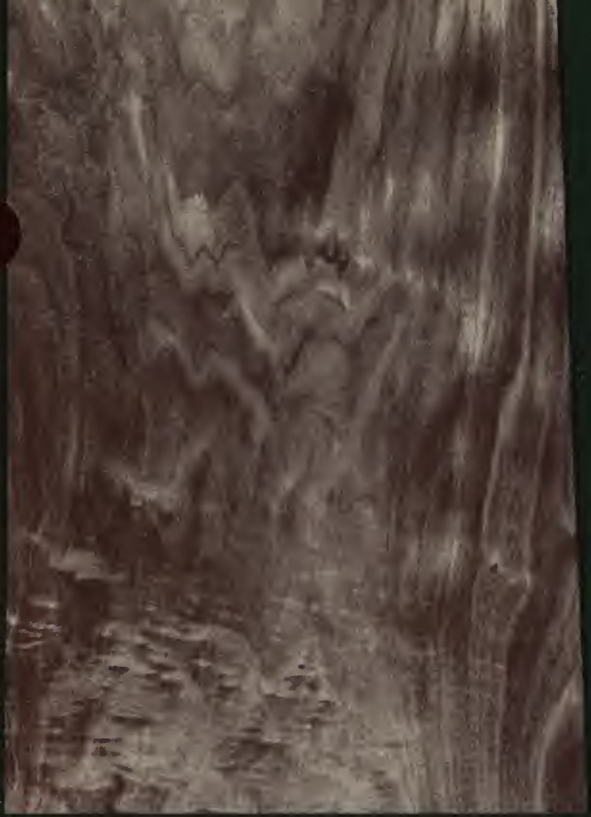
Above 35b. Same Stumpwood, Mild Figure, Open Pore, Lacquer Finish

Below 35c. Same Stumpwood, Mild Figure, Stained, Filled, "Early American" Finish



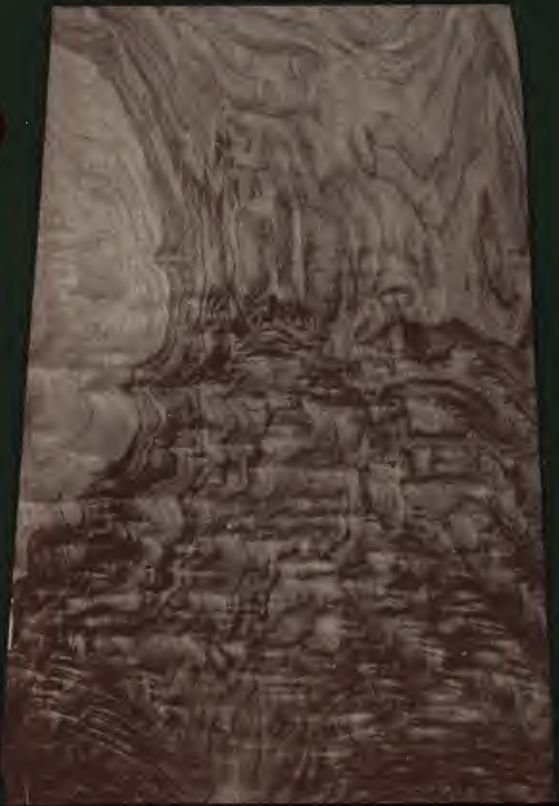
Below, 35d. Same Stumpwood, Mild Figure, Stained, Filled, "Piano Type" Finish

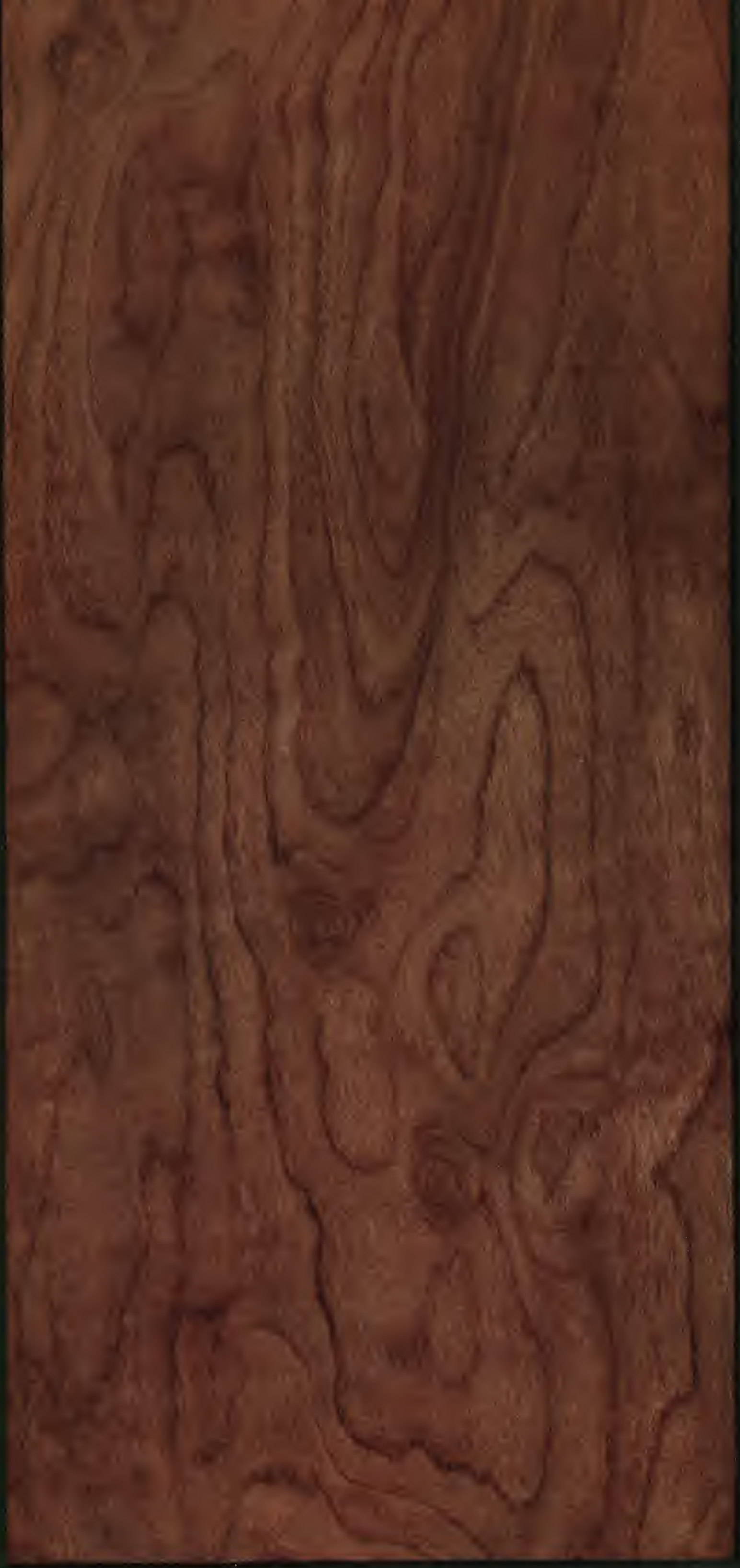




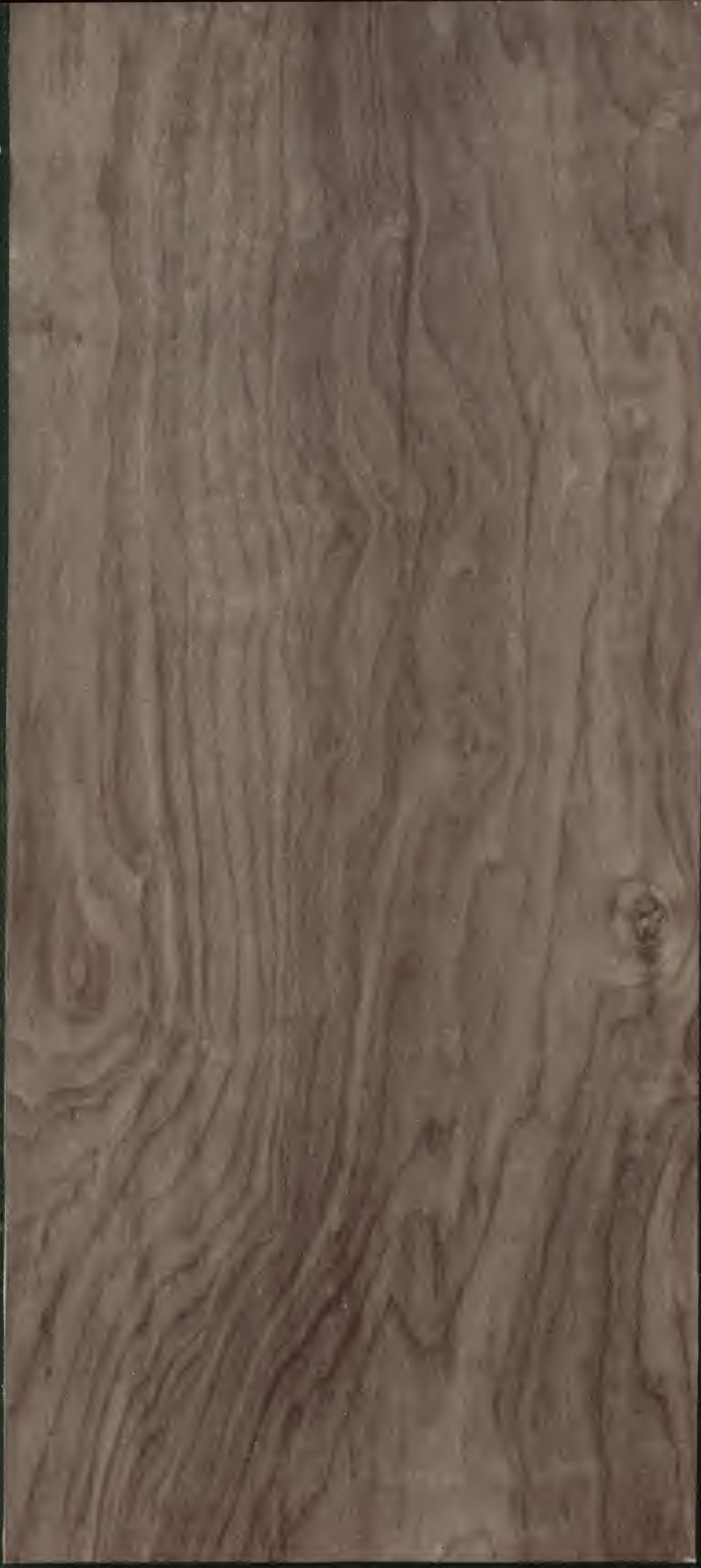
Above 36. Stumpwood, Largely Grain Character

Below 37. Stumpwood, 66% Figure

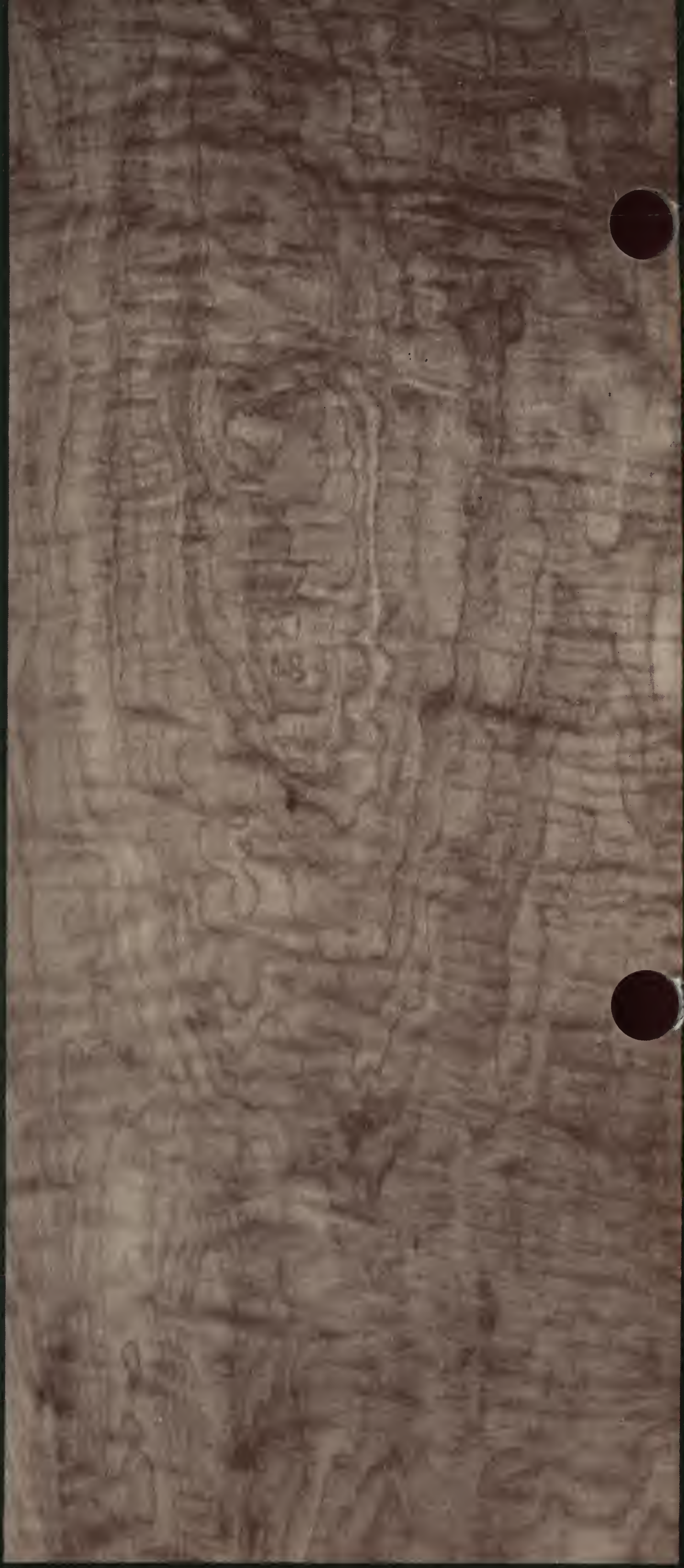




38. Plain Rotary, Colonial Brown, Dull Lacquer Finish



39. Plain Rotary, Knotty



40. Figured Rotary

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FINISH SPECIFICATIONS FOR COLOR PLATES SHOWN IN VENEER TYPES BOOKLET

Plate 9b - page 6, Gray-Toner finish (AWMA finish specification No. 781)

1. Stain with one part of VS-8931 reduced with five parts of No. 3670
2. Apply one coat of No. 4101 sealer
3. Fill with No. 27-5006 filler
4. Apply one coat of No. 4101, plus 1% white lacquer
5. Apply two coats of No. 14200 lacquer
6. Rub

These materials can be furnished by the DuPont Company.

Plate 9c - page 7, Warm Brown finish (AWMA finish specification No. 780)

1. Stain with a mixture of three parts of VS-4397 to one part of VS-4422
2. Wash coat with No. 4101 sealer
3. Fill with No. 27-5003 filler
4. Apply two coats of No. 14-200 lacquer
5. Rub

The above materials can be furnished by the DuPont Company

Plate 9d - page 7, Pinktone Walnut (AWMA specification No. 768)

1. Stain with Artistain S61-E-C2 and dry for one-half hour
2. Fill with CA-7839 and allow 30 minutes to dry
3. Apply one coat of Homoclad sealer V-81V5. Allow to dry overnight
4. Sand
5. Apply two coats of 27% water-white lacquer No. T-75CC1
6. Oil rubbed

The above materials can be furnished by the Sherwin-Williams Co.

Plate 14b -- page 10, "Champagne" Walnut Finish (AWMA finish specification No. 0-67)

1. Apply one coat of Dolan's one-operation bleach
2. Apply one coat of No. 3624 acid stain reduced with water
3. Apply one coat of bleaching lacquer No. 4107-A
4. Fill with a filler comprised of one part Clemco filler and one part natural filler
5. Apply one coat of 3500 sealer
6. Apply two coats of Vindolac Lacquer
7. Rub

The above materials can be obtained from the V.J. Dolan Co., Chicago, Illinois

Plate 14c - page 11, Gray Tone finish (AWMA finish specifications No.0-10)

1. Apply one coat of Vitraloid lacquer, dull finish No. 8843
2. Apply one coat of white paste filler No. 5, wipe off across the grain when set
3. Apply one coat of Vitraloid lacquer sealer No. 2823
4. Apply two coats of Vitraloid lacquer, clear gloss No. 9836

~~5.~~ Sandpaper between the coats of lacquer

5. Last coat rubbed with pumice stone and oil

The above materials can be furnished by the Pratt & Lambert Co.

Plate 14d - page 11, Rose Tone finish (AWMA finish specification No. 0-71)

This finish is exactly like the preceding finish with the exception of the filler. The rose filler in this case is No. 1984-C, provided by the Pratt & Lambert Company.

Plate 35b - page 18, Open Pore, Lacquer finish (AWMA finish specification No. 0-66)

1. Apply one coat of No. 4107-A bleaching lacquer
2. Sand
3. Apply one coat of Vindolac lacquer

The above materials can be secured from the V.J. Dolan Company of Chicago.

Plate 35c - page 18, "Early American" finish (AWMA finish specification No. 61)

1. Apply one coat of Artistain "Early American" No. CA-7978
2. Apply one coat of V-81-V-1 sealer
3. Sand lightly
4. Fill with dark walnut filler No. D-70-N-28
5. Apply one coat of Homoclad sealer No. V-81-V-5
6. Sandpaper
7. Apply three coats of TV-Lacquer Gloss No. T-70-C11
8. Rub and polish

The above materials can be secured from the Sherwin-Williams Co.

Plate 35d - page 18, "Piano Type" finish (AWMA finish specification No.775)

1. Apply a wash coat of shellac which is a mixture of one part 4 pound cut shellac with four parts of alcohol
2. Sandpaper
3. Fill with brown walnut filler No. CA-7976
4. Apply one coat of Homoclad sealer No. V81-V5
5. Sandpaper
6. Apply three coats of TV lacquer gloss No. T-70-C-11
7. Rub and polish

The above materials can be secured from the Sherwin-Williams Co.

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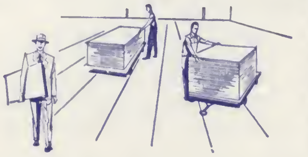
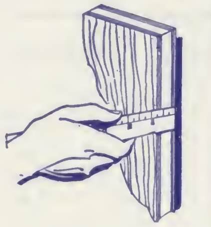
THE VERSATILE MODERN MATERIAL FOR EVERY NEED AND USE



DIMENSIONS: Hardwood plywood panels are available in width from 24″ to 48″, in 6″ breaks, and in lengths from 36″ to 96″, and in 12″ breaks. Wider width and longer lengths of 10′ and 12′ are available from many distribution warehouses. The shorter lengths and narrower widths are widely used and readily available. Economies can be achieved by designing to use the shorter and narrower panels. Many mills supply panels cut-to-size for special volume uses thus avoiding waste. Hardwood plywood is generally available in the handy, easy-to-carry sizes.

By scarfing (a perfected method of end joining) long lengths can be provided for marine and exterior uses. "Counter-front" size panels (with grain running the short way of the panel) are produced in widths of 72″, 84″, 96″, 120″ and 144″ (up to 192″ on order); and in lengths of 24″, 28″, 30″, 42″ and 48″.

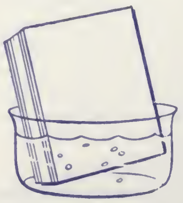


THICKNESSES: Veneer core construction panels in 3, 5, 7 and 9 ply are generally available in the following thicknesses:

3 ply—$\frac{1}{8}$″, $\frac{3}{16}$″, $\frac{1}{4}$″
5 ply—$\frac{5}{16}$″, $\frac{3}{8}$″, $\frac{1}{2}$″
5 and 7 ply—$\frac{5}{8}$″
7 and 9 ply—$\frac{3}{4}$″

(Unless otherwise stated, all hardwood plywood panels are sanded both sides with tolerance plus "0" or minus $\frac{1}{32}$″ and trimmed to specified size plus or minus $\frac{1}{32}$″.)

(Commercial standard hardwood plywood shall be square within $\frac{1}{16}$″ measured on short dimension.)



3 TYPES: *(Following descriptions are from 4th edition, Hardwood Plywood Commercial Standard CS 35-49.)*

TYPE I—Fully waterproof bond. (The bond shall withstand full weather exposure and shall be unaffected by micro-organisms. The bond shall be of such quality that specimens will withstand the cyclic wet and dry test, and cyclic boil test described in paragraphs 5.4.1 and 5.4.2.)

TYPE II—Water resistant bond. (The bond shall retain practically all of its strength when occasionally subjected to a thorough wetting and drying. The bond shall be of such quality that specimens will withstand the cold soak test described in paragraph 5.5.)

TYPE III—Dry bond. (The bond is suitable for use where it will not be subjected to water, dampness, nor high humidities.)

(FOR TECHNICAL AND MARINE HARDWOOD PLYWOOD special selections are made from available veneers to fit specific technical uses.)

A WIDE SELECTION OF POPULAR SPECIES AVAILABLE

Today, stock hardwood plywood panels are readily available in many popular and beautiful woods including: Birch, Gum, Mahogany, Philippine Woods, Oak, Walnut, Maple, Limba and Cherry. Most of these woods are offered in an interesting variety of grain and figure patterns. Exotic woods from all over the world are available on order.

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ONLY HARDWOOD PLYWOOD OFFERS ALL THESE IMPORTANT ADVANTAGES

HARDWOOD PLYWOOD IS STRONG

Because of the cross-ply construction, hardwood plywood has tremendous strength, not only lengthwise but across the grain. This equalization of the strength factor makes hardwood plywood ideally suited for use in large areas. It has been proven by actual test that pound for pound hardwood plywood is stronger than steel.

Improved utilization embodied in the "stressed-skin" principles of construction have enabled designers and engineers to obtain remarkable rigidity and strength factors from hardwood plywood.

HARDWOOD PLYWOOD HAS GREAT DIMENSIONAL STABILITY

Because the adjacent layers of veneer in hardwood plywood run at right angles to each other, the tendency of any individual ply to shrink or expand is severely restricted, hence the panel is highly stable. Also, since the wood is cut or sliced in thin layers and carefully dried in scientifically controlled dryers, moisture content is practically uniform throughout the entire panel and possible distortion is reduced to a minimum.

HARDWOOD PLYWOOD RESISTS IMPACT—WILL NOT SPLIT

Because of its cross-layer construction, hardwood plywood can take an amazing amount of abuse without damage. The impact of any blow is dissipated throughout the entire area of a panel. Nails, screws and other fastenings can be placed near the edge without danger of splitting.

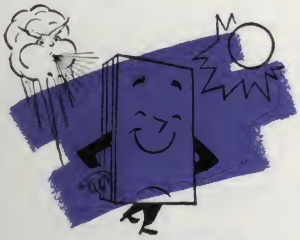
Resiliency, or the ability to return to normal position after intermittent loads, is an important quality of hardwood plywood which makes for efficient design.

HARDWOOD PLYWOOD IS SMOOTH

The inherent properties of hardwoods, and freedom from grain-raise, assure smooth surfaces. Because of the wide selection of densities offered by the various species, it is possible to tailor a panel to suit any particular surface requirement. If abrasion resistance is necessary, a high density wood is used for the surface layer. If only smoothness is required, a medium or low density veneer may be adequate. Hardwood plywood, except in packaging and industrial grades, is a carefully sanded, ready-to-finish material and reasonable care should be exercised in handling panels so that the beautiful, smooth surface is maintained.

HARDWOOD PLYWOOD IS EASY TO USE—SAVES TIME

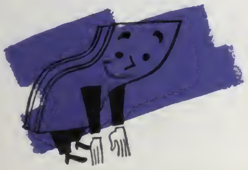
A hardwood plywood panel can be easily and smoothly machined with ordinary woodworking tools. Uniformity of texture and freedom from chipping and breaking make it a preferred material for cabinet or built-in construction, not only by professional craftsmen, but by home owners. Because of the rigidity and uniform strength properties of hardwood plywood, thin panels can often do the work of thicker more expensive components, making the article lighter and easier to handle. The large size panels cover large areas quickly.



HARDWOOD PLYWOOD HAS HIGH INSULATION VALUE

Because it is genuine wood, hardwood plywood has excellent insulation properties. The co-efficient of heat transmission varies with the species, with the low density woods having the greatest insulation factors. Generally, hardwood plywood wall sections, with dead air space, have insulation values equivalent to many commercial insulation materials.

Hardwood plywood's dimensional stability under temperature changes makes it preferred for industrial and TV cabinet use. Although wood is combustible, the smooth flush surfaces of Type I, or Tego-bonded plywoods have retarded the spread of fires maintaining their structural strength and rigidity so that fires were contained within limited areas.



HARDWOOD PLYWOOD CAN BE BENT FOR CURVED SURFACES

Although commercial hardwood plywood is designed as a flat panel, any standard panel can be bent more readily than solid wood. The radius of curvature to which a panel can be bent depends upon its thickness. Some hardwood plywood producers make simple and compound curved plywood for specialized uses. Waterproof (Type I) hardwood plywoods can be bent to substantially shorter radii after being soaked or steamed. (For abrupt curvatures, kerfing of the back to reduce compression makes it possible to bend to even shorter radii.)

ALWAYS SPECIFY HARDWOOD PLYWOOD BEARING THIS SEAL hpi **IT'S YOUR ASSURANCE OF THE FINEST QUALITY CRAFTSMANSHIP**

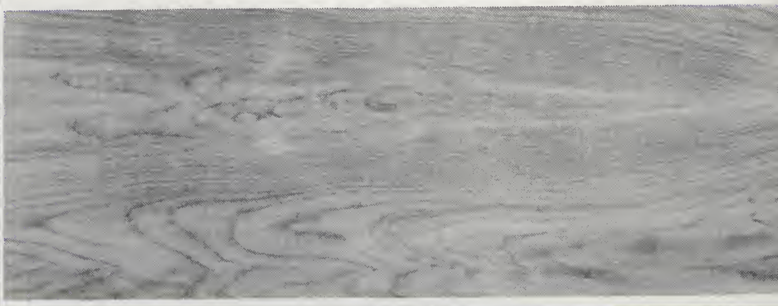
HOW TO SPECIFY HARDWOOD PLYWOOD BY GRADE

Following are the basic HPI grade standards governing faces and backs of hardwood plywood. These designations were adopted by HPI in consultation and agreement with major producers and distributors.

THE PANELS BELOW SHOW TYPICAL CHARACTERISTICS OF VARIOUS GRADES OF BIRCH. FIGURE AND GRAIN CHARACTERISTICS OF THE SPECIES DIFFER, BUT THE QUANTITY AND TYPES OF VARIATIONS BETWEEN GRADES OF ALL WOODS ARE APPROXIMATELY THE SAME.

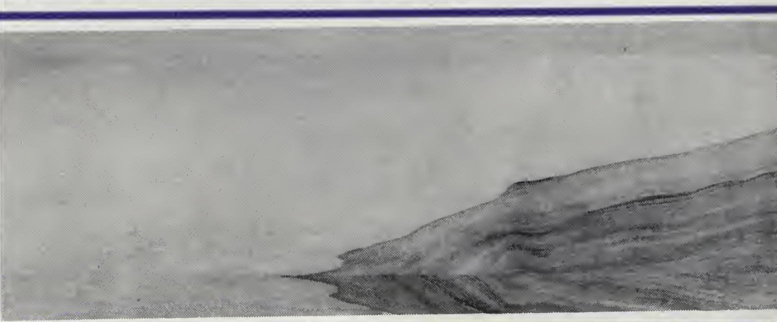
CUSTOM GRADE—

This grade includes special selections and types produced by individual mills, or panels of a grade description agreed upon by buyer and seller. Architectural plywoods, technical types and matched grain panels for special uses also are included.



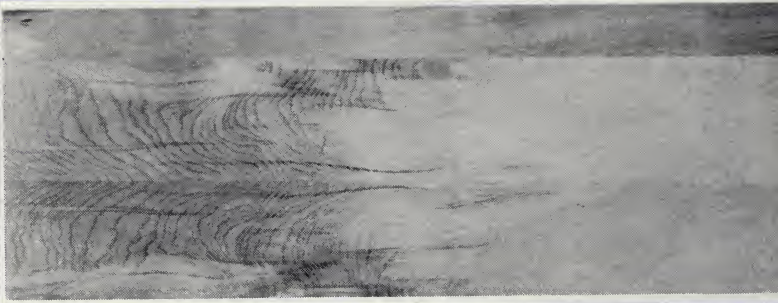
GOOD GRADE (1)—

(For natural finish)—The face shall be made up of tight, smoothly cut veneer, containing the natural character markings inherent in the species. If made of more than one piece, matched at the joints to avoid sharp contrasts in color and grain. A few small burls, occasional pin knots, slight color streaks or spots shall be permitted. Knots (other than pin knots), worm holes, splits, shake, doze and other forms of decay shall not be permitted.



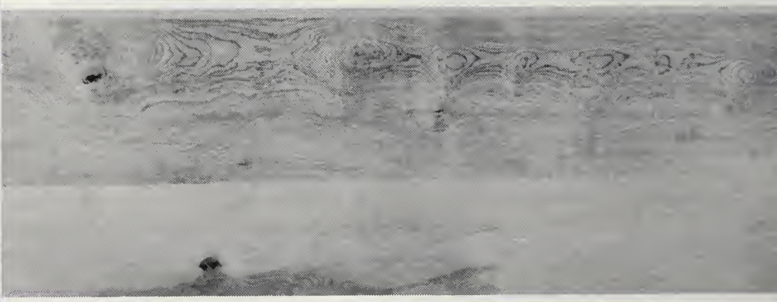
SOUND GRADE (2)—

(For smooth paint surfaces)—The face shall be free from open defects to provide a sound, smooth surface. The veneer is not matched for grain or color. It may contain mineral streaks, stain, discoloration, patches, sapwood, sound tight knots up to ¾" in average diameter, sound smooth burls up to 1" in average diameter, hairline splits or open joints up to a maximum of 1/64". Rough cut veneer, brashness, shake, doze or other forms of decay are not permitted.



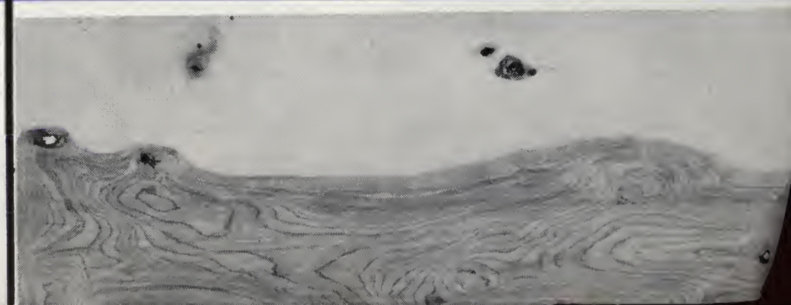
UTILITY GRADE (3)—

Discolorations, stain, mineral streaks, patches, tight knots, tight burls, knot holes up to ¾" in average diameter, worm holes, splits or open joints not exceeding 3/16" and not extending half the length of the panel, cross breaks, and small areas of rough grain shall be admitted. Brashness, shake, doze, or other forms of decay are not permitted.



REJECT GRADE (4)—

The veneer shall be unselected for grain or color. Knot holes no greater than 2" in maximum diameter and no group of knot holes in any 12" square exceeding 4" in diameter and splits no wider than ½" shall be admitted. Splits ½" wide at widest point may be one-fourth panel length; those not more than ⅜" wide at widest point may be one-half panel length; those not more than ¼" wide may be full panel length. Mineral streaks, stains and discolorations not associated with rot or doze, shims, plugs, patches, knots, burls, worm or borer holes and other characteristics are permitted, provided they do not seriously impair the strength or serviceability of the panel into which the veneer is incorporated.



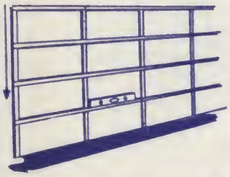
HARDWOOD PLYWOOD IS EASY TO INSTALL AND FINISH
4 SIMPLE STEPS — CHOOSE FROM SEVERAL OPTIONAL METHODS

Hardwood plywood panels are easy to install and can be "natural" finished very simply. The wide color range offered by the various species makes it possible to select panels of the natural color tone desired. When other than natural color is desired, toning, staining or bleaching can be accomplished by following simple instructions provided with finishing materials.

Because every panel is smoothly sanded by the manufacturer, it is ready for finishing without laborious preparation. The soft-toned finishes so popular today are much lower in cost and easier to apply than highly reflective "piano" finishes.

The methods and procedures outlined below are suggested for simple installations. For large projects such as public buildings or institutions a millwork firm and master painter should be consulted.

STEP 1—PREPARING THE WALL



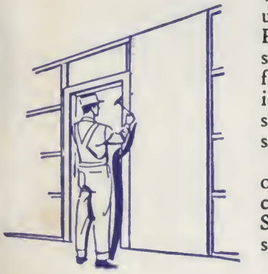
Check wall for plumb. There should be no loose plaster or other irregularities. Panels may be applied directly to an old wall, but it is generally desirable to install furring strips. If an outside wall on which insulation or a moisture barrier is to be used, these should be applied before the furring strips. A usual method is to apply furring horizontally about the room with vertical members "let in" on 16" centers or where the panel joints occur. General spacing for horizontal members is two feet apart, although this may be varied if there is to be a chair rail (30" to 36" from the floor). If wall appears "hollow" in spots, insert shingles or wooden shims so furring strip is straight and true. Use cut steel nails or resin coated nails for attaching furring to plaster walls.

STEP 2—LAYING OUT THE JOB

Plan sequence of panels about room so that natural color variations form a pleasing pattern in complimentary tones, or in direct contrast, if preferred. Lay panels against wall for visual examination prior to nailing. For most interiors it is practical to start paneling from one corner and work about the room. If wall or room has a fireplace or picture window, paneling should be started on each side, or be balanced at the center and the remaining panels placed to the right or left, working about the room. If all panels are same width and window or door units are balanced across a wall area, start at center of the wall and work both ways. Do not be concerned about the natural variations in color as they will enhance the appearance of the room, as long as there is some symmetry of arrangement.

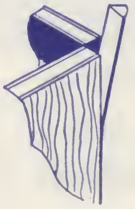
STEP 3—APPLICATION

Although several joining systems can be used, the simple V joint made by running a plane along the edge of the panel is generally preferred. If a flush butt joint is required, panel should be grooved to receive a spline so alignment will be perfect on surface of panel. Panels may be fastened by small finishing nails or brads which are later counter-sunk and filled with matching plastic wood. Heavier nails may be used at base and top where moldings will cover. Panels also may be glued with electrically cured adhesives or fastened from behind with screws or special fasteners. Combination of small brads and spot glueing is also an effective method. When nailing, be certain to start along one edge of panel and work across width so as to avoid bulges.



Some manufacturers make panels which are grooved or splined on the edges; others furnish special wood covered metal moldings which hold panels in place. Several types of splines, raised panels or recessed panel systems are also available.

For "inside" corners the most common procedure is to use a simple butt joint, covering with a cove or quarter round molding. For "outside" corners, that is, a wall which forms a right angle into the room, panels should be cut to fit flush to edge of furring strip or wall studding. This will permit installation of a quarter round of the same thickness as the panels to hide joint and provide a smooth rounded edge. An alternate method is to use a mitered joint, but extreme care should be taken to insure perfect fit.



Special moldings for base, cap or crown are available in most every wood species. Slight variations in color tone are to be expected but this variation actually enhances overall appearance.

Set all nails but don't fill nail holes until after first coat of sealer or shellac. After installation, panel areas, edges and moldings should be lightly sanded and then wiped free of dust and grit before applying finish.

STEP 4—FINISHING

Clear Natural Finish — To utilize the full natural beauty and individuality of hardwood plywood, any of several finish systems may be used. The following suggestions have been found practical but alternate methods are being developed continually by paint manufacturers:

1. Apply prime coat of clear sealer or thin coat of white shellac mixed with equal portion of denatured alcohol. When dry, fill nail holes with plastic wood dough or putty tinted the color of the wood. Generally, two shades of filler are needed, one for light and one for dark areas. When dry, rub with No. 1 steel wool or No. 00 sandpaper. (This prime coat may be tinted, if desired.)
2. Apply a second coat of clear sealer or varnish. (An alternate method to obtain a lighter appearance, resembling raw wood, is as follows: After Step 1 above, apply coat of white pigmented sealer with a brush or cloth. Cover an area of not more than 30 sq. feet, allow to set two or three minutes and wipe off to desired tone. In spots where wood is darker, allow more pigmented sealer to remain. Thus, general color tone is held uniform. After allowing second coat to dry 24 hours, rub with steel wool or fine sandpaper and fill nail holes with plastic wood dough or putty tinted to proper shade.)
3. Apply third coat of dull varnish which may be buffed to a velvety sheen when dry. If minimum job is required, a third coat of self-polishing wax may now be used. However, to obtain a longer wearing surface, either a varnish or a third coat of lacquer is recommended.

When oak, mahogany, walnut or other open grained woods are used, the procedure is the same, except that a white or natural filler should be used as second coat to fill pores and provide a smooth surface.

Lacquer Finish — Apply coat of lacquer sealer, sand lightly. Apply two or three coats clear lacquer as desired. Buff and wax.

Wax Finish — Several firms have introduced wax finishing systems which are adequate for hardwood plywood. It must be considered when selecting these systems that a subsequent paint surface or varnish surface cannot be applied, because wax becomes imbedded in the wood fibers and will soften varnish or lacquer.

Staining — Staining can either deepen or lighten the natural color of the wood to desired shade, while preserving natural grain and figure. There are three recommended methods:

1. Apply first coat of ½ white shellac and ½ denatured alcohol or thin coat of clear resin sealer; apply second coat of the desired stain; apply third coat of white shellac. When dry, sand lightly with fine sandpaper. Add fourth coat of either flat or gloss varnish.
2. Apply first coat of clear lacquer sealer; apply second coat of the desired stain; apply third coat of lacquer sealer. Add fourth coat of clear lacquer, sanding lightly between applications.
3. Apply one coat of combination stain and wax. Allow a few minutes for stain to penetrate then wipe with rag to desired shade. Apply second coat of self-polishing wax and buff to desired sheen.

Bleaching — Unusual and distinctive effects are possible through bleaching. Ask your building materials dealer or paint store for the best procedure for your job.

Enameling and Painting — Hardwood plywood provides a smooth durable surface for enameling or painting. There is no grain-raise and if close grained woods such as birch, gum or maple are used, no filling is necessary.

NOTE: Whatever finishing system you use always pre-test it by completely finishing a small scrap of plywood to see the exact effect you will get. It is often difficult to visualize final appearance from first coat.

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